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**X5 xDrive40e**

Plug-in hybrid announced  
with 313hp and over 80mpg

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## New 650i & M135i

Sampling the latest GT and the awesome hot hatch



135i receives the 1M treatment



Retro muscle: M3-powered E28



Steve Soper's race-winning E36



Right-hand drive E30 M3 tested





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It's usually about this time of year that I begin to get excited about the start of the new motorsport season and while there's no BMW interest in Formula One these days, I still end up feeling like a kid on Christmas eve just prior to the season starting. That feeling of optimism and elation evaporated pretty rapidly during the course of the Australian Grand Prix as it looked like we were simply going to watch Mercedes Domination the sequel this year, so I was pleasantly surprised when Ferrari managed a win in Malaysia. I can't see anyone else other than Mercedes winning the title though and I can imagine there are some top-level BMW execs watching Honda's re-entry to F1 thinking they were glad they didn't try that again!



It's not just about F1 though and as I type this we're literally a couple of days away from the start of the BTCC season and hopefully I'll be able to duck out of the family Easter Sunday meal for a few minutes to see how Andy Priaulx gets on in his return to the series behind the wheel of one of the West Surrey-run 125i M Sports. So far his endurance racing exploits in the Z4 in the US haven't gone exactly to plan – there's nothing wrong with his driving, the car just hasn't been reliable or quick enough so far. Let's hope that when he has his first outing in the Z4 in the European Le Mans Series it goes more according to plan.

It's not just modern racing that we have to look forward to though as there will be some fantastic classic events to bookmark this year, too. While the CSLs you can see pictured below with the latest Z4 GTLM machine might not have been racing at Sebring, it was great to see the cars wheeled out in celebration of the 40th anniversary of BMW's first major victory in America and the Z4s wearing a similar colour scheme was a nice touch. If you want to see cars like these classic CSLs in action you'll probably need to head over to Europe to events such as the Spa Classic, the Monza Historic or the Old Timer Grand Prix at the Nürburgring. It's well worth the effort though.

We have two cracking racing features this month too, both featuring the E36 – one's a history piece about Steve Soper's Super Tourer in which he won the Spa 24 Hour race and the Guia Touring Car event in Macau and we've also had a look at a trio of Brits who will be entering the 24 Hour race at the 'Ring for the first time. But don't worry, it's not all about race cars as we have plenty of new cars, modified cars and classics to drool over this month too. Enjoy the issue.

Bob Harper, Editor



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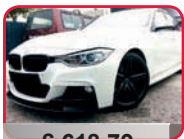
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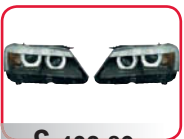
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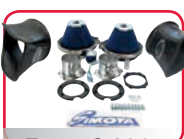
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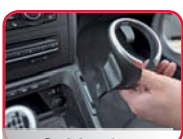
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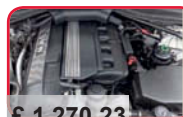
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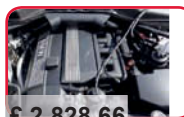
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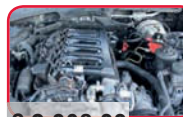
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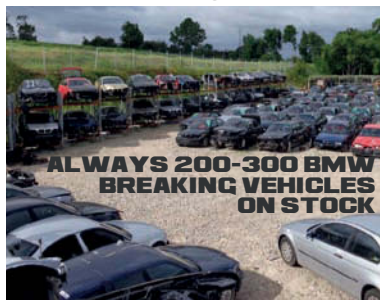
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ISSUE 251 MAY 2015



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- 010 **New Products** A round-up of the latest and greatest parts and products.
- 014 **Style with Substance?** We get to know the new X6 xDrive30d by offering to drive one back from Geneva.
- 018 **Still the One** We've driven the new 120d xDrive and the M135i to see how the face-lifted 1 Series shapes up.
- 024 **Daily Express** A finely-fettled E28 5 Series fitted with an S50 M3 engine and six-speed gearbox to boot.
- 032 **Soper's Super Tourer** A look back at an E36 that won at Spa and Macau.
- 040 **Subtle Six** The new and improved version of the current 6 Series is here.
- 046 **The Right Stuff?** Plenty of people are quick to dismiss a right-hand drive E30 M3, so we tried one for ourselves.
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- 060 **Training Day** We try out a day of advanced driving instruction on the road.
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## X5 plug-in hybrid makes its debut

Up until now the only plug-in hybrid BMWs available to buy have been those from the company's 'i' stable, but with the debut of the X5 xDrive40e we have the first of what promises to be many Plug-in Hybrid Electric Vehicles (PHEVs) from the core BMW brand. The concept for this X5 has been doing the motor show rounds for a while now and a couple of months back we sampled the prototype 3 Series PHEV which we're expecting to make its debut when the F30 generation of 3 Series receives its mid-life refresh later this year.

The X5 xDrive40e will offer intelligently controlled interaction between the combustion engine and the electric drive, which together generates a total system output of 313hp, which endows the PHEV with strong acceleration while simultaneously having a reduction in fuel consumption and emissions. It returns a combined fuel consumption of up to 85.6mpg, and a combined electricity consumption of 15.3kWh. CO<sub>2</sub> emissions are just 77g/km.

The X5's internal combustion engine is the four-cylinder 2.0-litre unit as fitted to the '28i' cars so it delivers 245hp and 258lb ft of torque and this is combined with an electric motor that's integrated within the eight-speed automatic gearbox which offers 113hp and 184lb ft of torque. This boosts the engine's output for increased responsiveness with absolutely no delay when accelerating from stationary, as well as providing strong performance whenever a quick burst of speed is required. The BMW X5 xDrive40e completes the 0 to 62mph sprint in 6.8 seconds and has an electronically limited top

speed of 130mph. In all-electric drive mode, the vehicle is capable of a top speed of 75mph, again, electronically limited.

The eDrive button on the centre console lets drivers tailor the powertrain according to their own preferences and situation. When the vehicle is first started, the default 'Auto eDrive' setting is activated, with both engine and electric motor working efficiently together. The electric motor alone is used for setting off with normal power requirements, while the engine cuts in at around 44mph or when the driver wishes to accelerate briskly. In this mode, the intelligent operating strategy determines the most efficient drive combination at all times and switches to it automatically. The driver can also switch to the all-electric drive mode setting 'Max eDrive', whereupon the vehicle is powered solely by the electric motor. This mode is designed for comfortable driving with zero local emissions, and offers a maximum range of approximately 19 miles at a limited top speed of 75mph.

The third mode available is the 'SAVE Battery' setting, which allows the driver to conserve or build up the high-voltage battery's reserves for later on. When driving on the motorway, for instance, the state of charge can be kept constant or even boosted in order to use the high-voltage battery's power for all-electric driving in urban areas later in the journey. In this way, the stored electrical energy can be selectively deployed exactly when required.

The lithium-ion high-voltage battery pack can be topped up with mains electricity from any standard

domestic power socket, or more quickly from the BMW i Wallbox, as well as at public charging stations. The high-voltage battery, which also supplies power to the battery for the 12V electrical system via a voltage transformer, is housed underneath the luggage compartment floor, where it is well protected in the event of a crash. With a capacity of 500 – 1720-litres, the luggage area is barely compromised compared with other X5s.

Equipment levels are also pretty much on a par with the rest of the X5 range and the standard spec for the xDrive40e includes self-levelling rear air suspension, Professional Navigation, DAB, Xenon headlights, LED foglights, an automatic tailgate, Dakota leather upholstery, heated front seats and 40:20:40 split folding rear seats. The two-zone automatic climate control that features as standard on all BMW X5 model variants is extended to include an auxiliary heating and ventilation system: this comprises an electric instantaneous water heater and an electric refrigerant compressor which can precondition the car prior to driving.

Thanks to the battery pack and packaging requirements for the hybrid system there are a few options that cannot be spec'd on the xDrive40e – the third row of seats, the Adaptive Suspension Package Dynamic, Active Steering, comfort seats in the rear and the ski/snowboard bag being the most notable casualties.

The X5 xDrive40e will go in sale in the UK in the autumn with prices being announced closer to the car's launch date.





## Z4s struggle at Sebring

The stage was set for a fairytale victory at the 12 Hours of Sebring where BMW was making a big noise about its racing heritage in North America where the company recorded its first overall victory 40 years ago with the 3.0 CSL. To honour that success, the two Z4 GTLMs sported special liveries as a homage to the CSL and many of the heroes of the day included race-winning drivers 40 years ago – Hans-Joachim Stuck and Brian Redman – were in attendance, as was Jochen Neerpasch, the

first managing director of BMW Motorsport.

Qualifying for the event went reasonably well with the Z4 driven by Dirk Werner taking fourth spot while Lucas Luhr put the number 24 car in sixth position. In the event though the Z4s didn't have the pace of the opposition and despite a full course yellow with two hours to go that bunched up the leading group of GTLM cars number 24's final stint driver Luhr was unable to fight his way on to the podium, finishing fourth after a power

steering problem hampered his efforts.

For Werner, Auberlen and Farfus in the number 25 car the race didn't go according to plan either. After five and a half hours, Werner entered the pit lane with a damaged front subframe, running in sixth at that time. The necessary repair work cost the trio more than ten laps, and they dropped to the very back of the GTLM field and despite strong drives thereafter they could only manage an eighth place.



## X6 M Performance Accessories

Hot on the heels of the debut of the new F16 generation of X6 comes a host of BMW M Performance Accessories for those who like to add a little personalisation to their cars.

For the exterior there's a carbon fibre front splitter, rear diffuser and rear spoiler, as well as rear fins and rear side flaps in a high-gloss black. Also on offer are hand-built carbon exterior mirror caps, a high-gloss black kidney grille and high-gloss black rear fins. Other options include 21-inch bi-colour light-alloy wheels with run-flat tyres, which are 1.5kg lighter than comparable standard light alloy

wheels and chrome exhaust tailpipe finishers.

Inside you can choose from LED door sills with BMW M Performance lettering, a carbon gearshift lever with BMW M logo and an M Performance steering wheel in Alcantara with carbon trim.

It's not all about styling though as there will also be a performance upgrade for the X6 xDrive30d, which ramps up the car's output and torque from 258hp/413lb ft to 277hp/431lb ft.

These M Performance accessories for the X6 are on sale now with prices starting at £79 for BMW Performance aluminium pedals.



## 220d xDrive and 218i Coupés confirmed

BMW UK has announced that it will be adding the three-cylinder 218i to its Coupé range and for those wanting the security of four-wheel drive the good news is that the 220d xDrive Coupé will also be listed in the UK. We reported back in our March issue that these models were being planned, but at the time there had been no confirmation from BMW as to whether they would be added to the UK line-up.

The 218i will offer 136hp, a sub-nine second 0-62mph time and an official economy figure of 52.3mpg with prices starting from £22,355. The 220d xDrive has a heftier price tag – £30,065 – but offers 190hp, 295lb ft of torque, a 6.9 second 0-62mph time and claimed economy of 62.8mpg. At the same time BMW UK has announced the arrival of the Luxury trim package for the 2 Series which features Chrome Line exterior trim and the outer air intake surrounds, 18-inch light alloy wheels, fineline high-grade wood interior trims, a leather sports steering wheel and Dakota leather trim. Luxury is available for £2,000 over the equivalent SE model.



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## MOMO SK50 gear knob

The Italian brand MOMO has launched its latest range of alloy gear knobs, which includes the simple, yet sophisticated and slim SK50. Machined from billet aluminium, it won't wear or crack like a plastic knob or come apart like a leather knob. Aluminium doesn't conduct the cold in winter or heat in summer as much as a stainless steel knob will either. Available in a choice of anodised anthracite, black, red or silver finishes all with the iconic MOMO logo printed on the top pad, it provides a true racing look for any street, classic or race car.

**Price:** £59.99

**Contact:** [www.momo-uk.co.uk](http://www.momo-uk.co.uk) or call 01268 764411

## Yellow Speed M4 coilovers

Upgrades are coming in thick and fast for the current M4 and the most recent are these coilovers from Yellow Speed Racing. The Dynamic Pro Sport kit is developed in-house and features damping and height adjustability to lower the car from 50-100mm. The top mounts also allow camber adjustments to be made for the ideal

road and track setup. Custom spring rates are available and the damper bodies are coated with electroplating treatment to prevent rust and corrosion and include a 15-month warranty.

**Price:** £739

**Contact:** [www.yellowspeedeurope.com](http://www.yellowspeedeurope.com) or call 01782 334440



## Clarion CZ505E DAB Radio



Whilst just about every modern car seems to be fitted with an integrated stereo and media system, that's not to say owners of older cars can't get a slice of modern technology. Clarion has launched a new DIN-sized unit especially for the UK market with everything you could ever want. The all-new unit offers both DAB and FM radio, switching automatically

between the two and also features a CD/MP3 player, USB and jack ports to plug in your iPhone as well as Bluetooth handsfree and music streaming. The glass mounted DAB aerial also comes inside the box.

**Price:** £169

**Contact:** [www.clarion-shop.co.uk](http://www.clarion-shop.co.uk)



## Richbrook car covers

One of the UK's biggest names in approved aftermarket car products, Richbrook, has just launched a range of lightweight, tailor-made car covers. Suitable for both indoor and outdoor use, the covers feature a special bonded coating to ensure up to 95 per cent of standing water is shed from the cover's surface. Inside, there's a breathable, non-abrasive material that allows damp and condensation to evaporate swiftly. There are over 1000 different types to specifically fit each individual make and model and they feature elasticised hems and double stitching for a snug and secure fit.

**Price:** £89.99

**Contact:** [www.richbrook.co.uk](http://www.richbrook.co.uk)





## NSK Elite E30 3 Series window louvres

For those looking for a decidedly retro look for their E30 3 Series then NSK Elite has started producing new high quality rear window louvers. Originals are now incredibly hard to find and very expensive but these NSK louvers are being

produced in small numbers so if you want one, don't hang about, especially as there's a special deal for the first ten customers.  
**Price:** First ten customers £499, normally £649  
**Contact:** nskelite.com



## Powerflex inserts for E46 3 Series, E83 X3 and Z4

UK based polybush specialist Powerflex has been busy adding to its extensive range once again. The new inserts are designed to fit into and fill the voids in the original rubber subframe bushes in order to stiffen the rear of the car. The inserts are fast and simple to install and considerably reduce rear-end movement without even having to remove or drop the subframe itself. The inserts are designed to fit the X3, E46 and Z4 models, including the M cars and Powerflex also offer full polybushes to completely replace the original subframe bushes. For those requiring an even stiffer feel, Powerflex also offer the Black Series of harder bushes designed for track use.

**Price:** POA

**Contact:** www.powerflex.co.uk



## Schmiedmann M20 turbo manifold wheel

German tuning specialist Schmiedmann has developed a new turbo exhaust manifold to fit the M20 six-cylinder engine fitted in either an E30 3 Series or E34 5 Series. It is made from stainless steel and designed for a top-mounted T3 flange turbocharger, making it a whole lot easier for anyone who happens to be thinking of upgrading their M20 with a large dose of power.

**Price:** £393.73

**Contact:** www.schmiedmann.com

## BMW Car binders

Here at *BMW Car* magazine we've finally had a new batch of binders produced so readers can ensure their issues of the magazine are kept in fine form. The binders hold 12 issues each and feature a completely new outer design with an iconic BMW emblem. They are available to buy from our newly developed website, where other associated products, merchandise and back issues can also be purchased.

**Price:** £11.50

**Contact:** www.unitymags.com



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Model shown ACS4 Sport based on BMW M4. Finance available subject to status. E&OE.



## Renown USA steering wheels

If you are looking for a high quality alternative to traditional steering wheels, then Renown USA may well fit the bill. Made from 6061 aluminium for superior strength and light weight, the wheels feature genuine leather and suede for a classy style, vintage feel and understated look. They come in a variety of finishes and stitching colours so they should suit all applications.

**Price:** POA

**Contact:** [www.renownusa.com](http://www.renownusa.com)



## Evolve intake system for Z4 M

Hot on the heels of the intake system for the E46 M3 that was released recently, Evolve has also added a version suitable for the Z4 M that shared the same S54 engine. The comprehensive kit includes a genuine carbon fibre housing with a high flow air filter, a laser cut aluminium scoop with push fittings, a laser cut heat shield, a CNC-machined aluminium MAF tube and a silicone

joiner with BMW specification clamps. The result has shown to give proven power gains of up to 15hp and airflow is improved via the use of the front scoop mounted directly behind the kidney grille. Engine bay temperatures are also reduced and lastly there's the improved soundtrack.

**Price:** £600

**Contact:** [www.evolveautomotive.co.uk](http://www.evolveautomotive.co.uk)

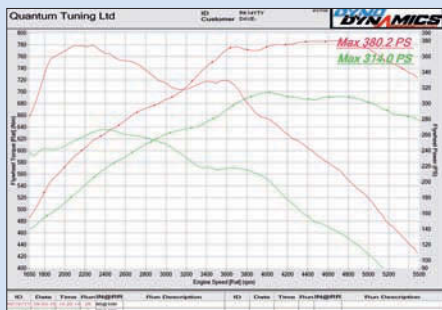


## MOMO Quantum Evo alloy wheel

Also from MOMO this month is this brand-new alloy wheel. The cutting edge design features dished spokes to accentuate the width, as well as modern diamond cut spokes and a MOMO Italy centre cap. The Quantum Evo is available in a matt anthracite and diamond cut finish with a wide range of fitments for almost any application with sizes ranging from 17-20 inches. The wheels are also run-flat and TPMS compatible.

**Price:** From £150

**Contact:** [www.momo-uk.co.uk](http://www.momo-uk.co.uk) or call 01268 764411



## Birds Motronic modification for F30 335d and F32 435d

BMW tuning specialist Birds, in conjunction with Quantum Tuning, have announced the release of their new break through in diesel tuning for the current x35d models. Their Motronic modification increases power output from 314hp to 380hp, whilst torque increases from 470lb ft to a staggering 575lb ft. Not only does it significantly improve performance, but you will also feel safe knowing that your BMW is covered by Birds' unique

warranty, which offers protection against your entire driveline from engine and transmission to the rear axle. Other upgrades are also available in the form of exhausts, bespoke Bilstein sport suspension, Quaife ATB LSDs, anti-roll bar kits and Alcon big brake kits, all of which can be combined into packages with consequential cost savings.

**Price:** £2394

**Contact:** [www.birdsauto.com](http://www.birdsauto.com) or call 01753 657444





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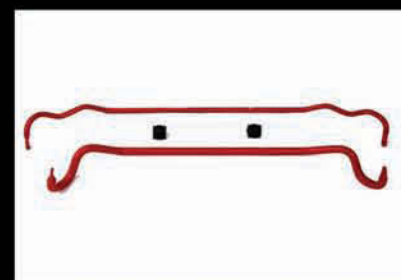
Birds B-Series Dynamics Packages for the latest 3 and 4 Series involves a combination of custom suspension and differential upgrades designed to transform the ride, handling and traction of the standard BMW;

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# STYLE WITH SUBSTANCE?

Can the X6 xDrive30d M Sport impress on a dash back from Geneva with a blend of performance, style and economy?

Words & photography: Bob Harper



Despite the fact I was working to a pretty tight deadline in order to feature the Geneva show in the last issue, when BMW offered me the chance to drive back from Switzerland in a new X6 I jumped at the chance. My head was telling me not to be a fool – let BA take the strain while I could use the airport downtime and the flight to write some words – so inevitably the heart won and I found myself ensconced behind the wheel of an X6 xDrive30d in the late afternoon with the prospect of hammering back to London by bedtime.

I love a longish Continental drive as you get to know a car well on the drive and it also provides you with plenty of time to think, something that can be a rare commodity when you work in an open plan office and have kids fighting for your attention when you get home. Once I'd adjusted the seat and mirrors to my satisfaction the first decision that had to be made was which way to return to Blighty – if you're in a hurry the Autoroute through France is the obvious choice but the most direct route takes you through the Haute-Jura National Park for the first 120 kilometres or so and this was the way I elected to go as it would give me a chance to sample the X6 on roads that weren't motorways.

But before we get on to how the X6 fared as a continental-cruiser we should quickly familiarise ourselves with what exactly we'll be driving. So far we've experienced the two top dogs in the X6 range – the mighty M50d (December 2014) and the bonkers X6 M (March 2015) – as well as the US-only sDrive35i, but this 30d we have here is the entry-

level model and will be the biggest seller in the UK. Today we have it in M Sport guise and if you were wondering how the standard 20-inch alloys look so small in the pictures that's because this machine is actually fitted with a 19-inch winter wheel and tyre setup as it had been used for an xDrive event up in the Alps prior to me taking over its controls.

While I've described it as the entry-level machine, this sounds slightly absurd given the 30d M Sport costs £55,850, although you can lop £4700 off that price if you opt for the SE model. It's a lot of money, but not necessarily any more or less than offerings from other manufacturers and it has to be said that the X6 is very well spec'd as standard. There's Dakota leather, a 'Softskin' covering on the dash, a multi-function steering wheel with shift paddles for the Sport auto transmission, part electric heated front seats, Professional navigation, Bluetooth and Adaptive M suspension on this M Sport model.

Motive power comes courtesy of BMW's single turbo (with variable inlet geometry) version of the 3.0-litre straight-six and it offers 13hp and 15lb ft of torque more than the previous generation X6 with 258hp and 413lb ft. Peak torque comes in at just 1500rpm which means it's 0.8 seconds faster than the old X6 to 62mph while economy has improved to a claimed 47.1 on the combined cycle with a CO<sub>2</sub> rating of 159g/km.

Its first task is to negotiate my way out of Geneva and a couple of junctions down the motorway before I can peel off into the Haute-Jura for a bit of fun before the motorway slog to the Euro Tunnel. Initial impressions once on the move are good – the

engine and transmission work so well together that you don't have to give them a second thought. Also, as befits a machine that's pretty tall, you do have a commanding view of the road, although the previous generation's bug bear of a letterbox-sized view through the rear screen has been carried over – thank the 'Coupe' styling for that – and for me it would almost be a bit of deal breaker if I were thinking of buying this machine.

Once on to the A road that will cross the hills, thoughts of looking through the rear screen are banished as the road becomes quite challenging with lots of short straights and switchbacks as it climbs steep escarpments. I'm following a well-driven diesel Golf GTi and while the X6 reels it in on the straights it struggles to keep up through the twistier sections, the combination of a 2140 kilo kerb weight and the winter tyres making it feel unwieldy when really pressing on. You can improve things by swapping the suspension into Sport and flicking the gear lever to the left to engage Sport mode which adds a little engine braking when you need it but ultimately I remember that this isn't a sports car and let the Golf disappear off into the middle distance. Simply notching back the pace from 'as fast as possible' to 'pretty brisk' makes a world of difference and I realise that ground can still be covered rapidly once you take into account the weight, high centre of gravity and winter rubber that's being tortured on what is actually rather warm and dry Tarmac for March.

All too soon the fun's over and I settle into a gentle lope along the motorway heading for the tunnel. Long gone are the days when you could power through





The engine and transmission work so well together that you don't have to give them a second thought

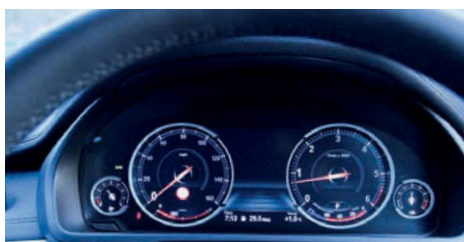






## F16 X6 xDrive30d

<b>ENGINE:</b>	Six-cylinder, 24-valve turbo diesel
<b>CAPACITY:</b>	2993cc
<b>MAX POWER:</b>	258hp @ 4000rpm
<b>MAX TORQUE:</b>	413lb ft @ 1500-3000rpm
<b>TOP SPEED:</b>	143mph
<b>0-62MPH:</b>	6.7 seconds
<b>ECONOMY:</b>	47.1mpg
<b>EMISSIONS:</b>	159g/km
<b>PRICE (OTR):</b>	£55,850



France so I set the cruise and let the X6 take the strain. I have the optional Head-up display on board (£995) and I do love it for its clarity and for the way it stops you from having to take your eyes off the road when checking your speed or absorbing commands from the navigation system. I was less keen on the instrument display itself which comes as standard with black panel technology which means you effectively get a digital rendering of a traditional set of instruments. They just look a little fake to me and as this car had the optional multi-functional instrument panel it also changes the display to red when you engage Sport and blue if you elect to use Eco Pro mode which I only do to remind myself why I don't like it – the car just feels unnecessarily slow!

As darkness falls I discover I'm getting flashed by several cars coming in the opposite direction and it occurs to me that the headlights must still be set for UK driving. I delve into the iDrive and as I thought

there's a setting in the 'Lights' section to switch them over for driving on the right, but this can only be done when stationary with the engine off so I take the advantage of the next fuel station, swap the lights over, rejoice the suitably large 85-litre tank and pick up some Scooby snacks too.

The rest of the journey passes in a bit of a blur and before I know it I'm subconsciously ducking as I travel under the maximum height barriers as I negotiate my way on to the Euro Tunnel. According to the handbook there should be ten centimetres of clearance but from the driver's seat you feel like you're going to hit the overhead barriers every time you go under one! While the train takes me under the Channel I sample the rear seat and decide that the headroom's a little mean for a six-footer and the middle rear seat doesn't look all that inviting. I also scroll through the journey computer and discover an average economy for the last 500 miles of a smidgen

over 30mpg – not horrendous, but not brilliant given that most of it was at a cruise-controlled 80ish mph.

There's a brief couple of days in the UK with the car before it goes back to BMW and punting it around London does highlight how big the X6 feels – negotiating width restrictions is hard work and even after a couple of days I found the lack of rearward visibility irritating. Features editor Simon also took it home for a night and while he returned raving about the superb drivetrain and the overall quality feel of the cabin he did reckon the steering felt pretty remote and vague which isn't something I'd particularly noticed – maybe that's because I drive a Passat everyday and he's got a 135i!

Overall though the X6 is a pretty convincing piece of kit, providing you like the styling and don't need to carry tall rear seat passengers too often. Personally I'd go for an X5, or even look at an X3 which I still reckon is one of BMW's best vehicles in its current line-up ●





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# Still the One

As is BMW's way, subtle mid-life updates ensure that the 1 Series stays ahead of the premium compact hatch pack

Words: Shane O'Donoghue Photography: BMW







While car makers are delighted to see returning customers ordering new cars, they get particularly excited by 'conquest sales', i.e. dragging a buyer away from a competitor brand. That doesn't happen in large numbers for an established nameplate, unless some class-leading piece of technology or other USP is introduced, but it's why the manufacturers are constantly on the search for new niches to fill. The 2 Series Active Tourer is one such vehicle, representing the first time that BMW has offered a compact MPV in its line-up. Apparently it's running at a product planning manager's wet dream-inducing 75 per cent conquest.

But what about the other 25 per cent? BMW admits that the Active Tourer will take from sales of the 1 Series. In spite of that, BMW UK is targeting sales of 30,000 examples of its baby and to help with that figure the new one went on sale on 28 March.

I say new, but you are in fact looking at the mid-life update of the 1 Series and as is BMW's way, there's a suite of subtle but effective changes. The restyle of the car seems to be focused on the lighting, but there's much change to the detail design. Up front, there are restyled kidney grilles in terms of their size, shape and surfacing; even the uprights have more of a three-dimensional appearance. The bumper underneath is new too and it's defined by larger air intakes to give the 1 Series more width. Most importantly though, BMW has replaced the headlights with far more attractive units, much more slender than the opinion-dividing items used before. They help the 1 Series' aesthetic cause no end and LED daytime running lamps are now standard. Buyers can upgrade to full LED headlights for low and main beam and the even more advanced Adaptive LED system if you're feeling flush.

While the front lights make for a subtly prettier 1

Series, the new rear lights are far more prominent, taking on an 'L' shape reminiscent of the lights fitted to the 6 Series. It features two separate parts, one of them mounted on the redesigned tailgate. They really stand out thanks to use of LED technology and are complemented by a redesigned back bumper. The Sparkling brown metallic colour of the test car pictured here is new to the line-up as well. As before, the range-topping M135i is offered in three- and five-door formats and it gets its own unique body styling to separate it even from the M Sport versions of the 1 Series. Present and correct are Ferric grey door mirror caps and 18-inch double spoke M alloys, large air intakes in the unique front bumper and a diffuser-like design for the rear bumper, which also houses the purposeful-looking twin exhaust outlets.

Inside, the M135i model has its name splashed about the place, but it's the M leather steering wheel, bespoke upholstery for the sports seats and unique



Existing owners trading up will note the enhanced level of standard equipment







The most noticeable changes to the 1 Series are the restyled headlights and tail lights but there have also been improvements to the interior both in terms of the amount of standard kit and the quality of materials used



trim inserts that really sets it apart from the rest of the line-up. It feels like a special car even before a wheel is turned. All versions of the new 1 Series gain enhanced controls for the air-con and stereo using high-gloss black and chrome to raise the perceived quality up a notch. Existing owners trading up will note the enhanced level of standard equipment too, now running to climate control, auto wipers, BMW Radio Professional and an iDrive-controlled high-resolution 6.5-inch display atop the dashboard.

Along with those, the SE models feature electric windows, a multifunction leather steering wheel, auto lights, DAB, Bluetooth and 16-inch alloy wheels. Sport versions add 17-inch rims, a sportier steering wheel and seats, ambient lighting and tweaks to the exterior look. M Sport cars as ever look more aggressive again thanks to the M Aerodynamic body styling and an upgrade to 18-inch wheels, while inside they gain Alcantara upholstery, lovely aluminium hexagon

inserts, sports seats and an M Sport steering wheel, plus there's also M Sport suspension.

Under the bonnet there are changes across the board to enhance efficiency and reduce pollutants to meet Euro 6 emissions standards, yet BMW has managed to squeeze a little more power out of some of the engines – including the charismatic turbocharged 3.0-litre six fitted to the M135i. It now has 326hp and 332lb ft of torque at its disposal, though we never really felt it was underpowered to begin with...

It's an engaging car to drive as ever and BMW's engineers have breathed on it further following customer feedback. So in Sport and Sport+ modes there's now a pronounced over-run burble and when the car is started up there's an intentional flare of revs. On top of that, the shift of the six-speed manual gearbox has been shortened, though some will still find the clutch a little springy in its action. In fairness,

we're just happy this car is still offered with a manual option in this day and age, and it really suits it too, further engaging the driver in the whole experience.

The M135i's brilliance comes from its mix of everyday usability and high performance and dynamics. For it to be at its best it needs to be fitted with the optional adaptive damping system, though the stats show that only about 25 per cent of buyers go for that – which is about the same level of take-up for the manual gearbox. Saying that, the eight-speed automatic is established as one of the best of its kind in the world and its dual-nature suits that of the M135i down to the ground. BMW still found area for improvement in the transmission apparently. It makes the M135i a fraction quicker against the clock (4.9 seconds to 62mph from rest as opposed to 5.1 seconds with a manual gearbox) and even improves economy and reduces emissions.

And let's face it, more buyers of the 1 Series are





## F20 120d xDrive

<b>ENGINE:</b> Four-cylinder, 16-valve, turbo diesel
<b>CAPACITY:</b> 1995cc
<b>MAX POWER:</b> 190hp @ 4000rpm
<b>MAX TORQUE:</b> 295lb ft @ 1750-2500rpm
<b>TOP SPEED:</b> 138mph
<b>0-62MPH:</b> 6.8 seconds
<b>ECONOMY:</b> 62.8mpg
<b>EMISSIONS:</b> 119g/km
<b>PRICE (OTR):</b> £28,355



## F21 M235i

<b>ENGINE:</b> Straight-six, 24-valve, turbocharged
<b>CAPACITY:</b> 2979cc
<b>MAX POWER:</b> 326hp @ 5800-6000rpm
<b>MAX TORQUE:</b> 332lb ft @ 1300-4500rpm
<b>TOP SPEED:</b> 155mph limited (155)
<b>0-62MPH:</b> 5.1 seconds (4.9)
<b>ECONOMY:</b> 35.3mpg (37.7)
<b>EMISSIONS:</b> 188g/km (175)
<b>PRICE (OTR):</b> £31,195

Figures in brackets refer to eight-speed automatic

concerned with such things, which is why BMW has revamped the diesel engine line-up for the new car. The updated 2.0-litre four-cylinder turbodiesel already rolled out elsewhere in the BMW range comes to the 1 Series for the first time, with new turbocharging technology, higher fuel pressure and, BMW claims, increases in refinement and efficiency. We reckon the new unit is still too audible in the 120d against quieter rivals, but it's impressive in every other aspect.

It's offered in three power outputs, varying from the 118d, which starts at £22,855 and produces 150hp and 236lb ft of torque to the 120d (190hp/295lb ft) to the twin-turbocharged 125d model, which puts out 224hp and 332lb ft of torque. The latter is the least frugal, but when the official figure is 61.4mpg, it's hardly wasteful, is it? Meanwhile, the 118d emits as low as 99g/km.

There is even more efficiency to be found further down the price range, with the introduction to the 1 Series of BMW's excellent new 1.5-litre, three-

cylinder turbodiesel engine. It's fitted to the 116d, and in the eco-focused 116d EfficientDynamics Plus model (£22,560 on-the-road) and returns an exceptional 83.1mpg while emitting just 89g/km. Yet with 116hp and 199lb ft of torque it shouldn't feel out of its depth keeping up with free-flowing traffic on the motorway.

At the launch of the revised 1 Series, we tested both the M135i (from £31,725) and the 120d fitted with BMW's xDrive four-wheel drive system. The latter has already proven very popular in many parts of Europe, but the market for all-wheel drive compact hatchbacks in the UK is a small one. It won't be helped by the £28,355 starting price, which compares to £25,305 for the rear-drive 120d, though the latter is available with a manual gearbox so it's considerably cheaper. Nonetheless, xDrive should be a massive boon in the winter months, overcoming one of the drawbacks of the front-engine/rear-drive layout, that of traction. In sunny Lisbon we didn't get

to test its mettle to the full, but it certainly made quick getaways a breeze, taking the 120d's 295lb ft of torque in its stride and translating it into quick forward momentum rather than unsightly wheel scrabble. Indeed, in spite of a 65kg weight penalty (compared with the automatic, rear-drive 120d), the xDrive model is a few tenths of a second faster to 62mph, setting a respectable 6.8-second time.

On a tortuously twisty road the xDrive system was found to enhance traction out of corners, but it also alters the wonderfully rear-led feel of the 1 Series, making it a more neutral car, especially noticeable in the middle of a corner when you're driving more 'enthusiastically'. Understeer is kept at bay, but there seems to be less adjustability in the chassis now. The target audience is much more likely to prioritise the extra all-weather composure over driver enjoyment on dry roads and it's still better to drive than, say, an Audi A3 TDI quattro. There should be a few more conquest sales coming BMW's way then... ●



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# Daily *Express*







With period perfect looks there's nothing to give the game away that this E28 happens to be packing over 320hp from an M3 engine and matching six-speed gearbox...

Words: Simon Holmes Photography: Laurens Parsons





There's something rather wonderful about a well-executed engine conversion, especially on an older car. The idea of transforming a conventional, run-of-the-mill model from the past into something exceptional by today's standards demonstrates a unique sense of creativity and innovation. Of course, the real trick is tailoring the package to harmonise together and, truth be told, it can be a tricky formula to nail.

This E28 seems to tick all the right boxes though. It looks virtually standard in every way both inside and out, yet there are small, understated touches in-keeping with the original theme, such as the wheels and seats. But beneath the bodywork is where it gets really interesting. Supplying the power is a 3.2-litre

S50 engine from an E36 M3 Evo, producing over 320hp, and it's coupled to a modern six-speed gearbox. With a mix of modified M parts and upgraded underpinnings to match, the 1980s 5 Series is brought firmly up-to-date and for the owner, James Cherrington, it also makes for an ideal daily driver and family car.

James is the man behind JFI Classic Cars, a successful restoration business that specialises in BMWs. James appeared in this magazine before when we featured his 2002 back in September 2013. Although James' beloved classic BMW was thoroughly modernised with fuel injection and uprated running gear, the stiff ride, roll-cage and lack of rear seats had made it whole lot less usable than he had intended for it to be. James soon found he couldn't enjoy the

car with his family and, not long after the feature, he decided to sell it.

This left a project car-sized hole in his life and it was James' wife who proposed the idea of trying a different route next time around. "She suggested building a car I could take the whole family out in," tells James. "Something more comfortable that I could use every day but still have some fun with or even take on track if I wanted to." The concept appealed to James but with a taste for older BMWs he wanted something a little different to the average modern-day mile-muncher. Fortunately he didn't have to look particularly far for the project base car as the ideal candidate just happened to be waiting patiently in his barn: an E28 528i.

Being a man firmly in touch with the classic BMW





Style 5 wheels were chosen as they look very much like the original metric items. The new wheels are wrapped in much stickier Toyo tyres and James reports it puts down the power very well



scene James had purchased the standard and original car around three years ago for no other reason than it was cheap and in very good condition. "I wasn't looking for one, I just saw it advertised and it looked very clean. So I phoned the owner and bought it. I had it collected and delivered to me without even seeing it. It was almost a spur of the moment thing really," tells James. The tidy Five was then, rather unceremoniously, stored in the barn for safekeeping until the right time presented itself. It spent the next year or so there but when the 2002 was sold, James knew it was time to bring the car out of hibernation.

Whilst the E28 formed a firm footing for the project, the other key ingredients were still to be determined but then James had a brainwave. He'd previously owned various other BMWs, including a

fine example of an E36 M3 Evo, and although it was perhaps a little too new for his liking the car made quite an impression. "I loved the combination of that engine with that gearbox," he recalls. "So I decided it was a good idea to put that package in the 5 Series. It also seemed like a cheap way to more power. Where else could you get over 320hp for the money?"

With a plan now gathering pace the hunt began for a suitable M3 to harvest the engine and gearbox from. After some searching for a bargain buy, James came across what seemed like the ideal donor in a cheap convertible. He promptly rushed up to see the car and, in doing so, made a grave error that actually worked out rather well for him! "The car was a quite a few miles away but I was in such a rush to see it I didn't even think to ask if it was a manual!" he says.

"When I got there I saw it was an SMG I said to the owner that I was sorry for wasting his time as it wasn't what I was looking for." However, keen to sell the car quickly, the owner asked James what he was prepared to offer him anyway. Although he didn't really want the car at this point James gave a lowball figure and the seller ended up accepting. The hard top roof and remaining tax and MoT further sweetened the deal.

The last piece to the puzzle was yet another donor car, this time a cheap E34 520i, which would yield a few essentials for the conversion, such as the sump and pick-up pipe. With the cars then stripped of their appropriate parts James gave the S50 M3 engine a thorough freshen up by treating it to new gaskets, oil and water pumps and uprated con rod bolts. The





## E28 S50

**ENGINE & GEARBOX:** 3.2-litre S50 and six-speed gearbox from E36 M3 Evo, custom-made stainless exhaust system, Walbro fuel pump, standard radiator

**CHASSIS:** GAZ Gold coilovers, adjustable top mounts, Powerflex Black Series bushes, E35 M5 rear trailing arm bushes, 3.64 large case differential with factory LSD option

**BRAKES:** E34 M5 discs and callipers all round with uprated vented rear discs

**WHEELS & TYRES:** 16-inch Style 5 alloy wheels with Toyo tyres

**INTERIOR:** Recaro Sports seats, VDO additional gauges

**EXTERIOR:** Standard

**THANKS:** Dave at Astbury Motorworks for the wiring



Interior is virtually just as BMW intended, although sports seats were a rare find, especially as they happened to be finished in the same colour!

SMG transmission was retained but sent off to be converted over to manual engagement, as only the clutch and gear change operation are different. "It also made sense as I knew the gearbox hadn't had a hard life having never been over-revved or crunched," tells James.

Bolted together and fitted with the correct sump it was then a matter of sliding the refreshed combo in the awaiting E28 shell. Unfortunately it wasn't as simple as it sounds. "I thought it would be easier than it was. The gearbox was bigger than I realised and that proved to be a problem as I wanted to keep the transmission tunnel standard," admits James. "So a lot of work went into mounting the engine and gearbox as low as possible to give clearance at the top the tunnel. It's a little lower than I wanted really





and the engine mounts are perhaps stiffer than I would have liked but it fits in there nicely now."

A custom-made exhaust system was fabricated for the car and Dave at Astbury Motorworks made a great job of the wiring as James wasn't used to that side of things, having dealt mainly in simpler 2002s! A Walbro fuel pump was fitted in the existing tank to supply the fuel and a single-mass flywheel conversion installed to improve response and reduce weight.

Once the engine and gearbox were in position James turned his attention to the rest of the car. Wanting a firm but comfortable ride and careful not to follow the same route as his previous 2002, GAZ Gold coilovers were installed as a way to allow the ride height and comfort levels to be easily altered when required. "I couldn't run it too low for the road

but this way I could still adjust it for track use. It's also polybushed on Powerflex Black Series track bushes. I did try the yellow ones but it was too soft and there's surprisingly little noise or vibration from them," James says. He also used his superior brand knowledge when it came to the rear trailing arm bushes, which are now fitted with the items from a 3.8-litre E34 M5. "These were one of very few BMWs to use spherical bearings. They don't use any rubber and required a bit of machining to make them work as they are an interference fit but they are really good and work even for this as a road car," James adds.

The brakes to complete the package are also from an E34 M5, both front and back, but these were subjected to a full rebuild and overhaul by James before fitting.

With the hidden underpinnings firmly in place it then came to the finishing touches elsewhere. James's approach was very much 'less is more'. "I didn't want anything on display. It's not that I particularly wanted to build a sleeper, I just like the look of these cars as they are so I left it as it was. The plus side is that people don't tend to realise what it is," James explains.

The wheels were one thing that had to be changed as the original metric items didn't provide many tyre options, so James sourced these perfectly-suited 16-inch Style 5 replacements wrapped in a modern and grippy tyre. "I wanted it to look like a standard car so these were ideal. It's hard to tell they aren't original really and the tyres are excellent, which helps as they are only 235mm wide," says James.



**“The car goes a lot like an E36 Evo as it’s the same sort of weight and it puts the power down really well”**



For the last few remaining parts James then bought himself yet another donor car in the shape of a tired E28 525e. The car happened to have a few hard-to-find parts that would suit the project perfectly, such as the rare large-case LSD and interior trim. “I basically bought the car just for the sports seats, which are very rare and must have been an option. They were mint and even the right colour, too! The German-made VDO gauges are from a 1980s Audi. I like them as they just look right. Other than that it’s all standard inside. It was a well-spec’d car anyway with an electric sunroof, rear blinds and ABS.”

The project took about two years to finish as James only worked on the car when he could afford the time, as spare time is virtually non-existent in his line of work. He has since covered around 2000 miles in the car and drove it through the winter, proving its practicality. “The kids and wife love it and it drives like a normal car still. The only problem it had was a small

electrical issue when I first got it running where the reverse switch was connected to the wrong sensor so the reverse lights came on in sixth gear! Other than that it’s been good really, but it was always going to be right as it’s been built properly,” James relates.

James reports the S50 engine works well in the shell and the performance it offers can’t be beaten as a package, especially when the other options are taken into consideration. “It looks at home in the engine bay and it was much cheaper than modifying an M50 to make the power. The S38 M5 engine was an option but it’s a little long in the tooth now and the S50 is reasonably cheap to buy and offers good value. It’s a versatile engine, too, and I like the way they drive. The car goes a lot like an E36 Evo as it’s the same sort of weight and it puts the power down really well,” he says.

But whilst the engine was a good idea James admits that the six-speed gearbox was perhaps more

effort than it was worth in some ways: “Looking back, it was a lot of work for not that much gain really. If I were doing it again I’d use the five-speed to avoid the trouble it caused. I never thought about changing it though as once I was committed I wanted to finish it”

Despite James’ otherwise obvious delight with the E28 he says it may soon be up for sale in order to make space for another family car he’s also been building up slowly on the side, this time a rather special 2002 Touring that’s nearing completion. There’s also a supercharged 2002 track car on the way and if either turn out anything like his previous cars then there’s a good chance we will be seeing more of him soon... ●

#### **CONTACT:**

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# SOPER'S SUPER TOURER

Steve Soper's Spa and Macau winning 320i has emerged from hibernation and now takes pride of place in the National Motoring Museum's motorsport section

Words: Guy Loveridge

Photography: Guy Loveridge & Jeff Bloxham



In 2011 the car was recommissioned and then reunited with Steve Soper, who remembers the car fondly. For its run at Goodwood it was given the appropriate number – 320 – which it still displays today



"I decided to concentrate on bringing the car back to life slowly with the emphasis on safety"







At the tail end of March a newly created motorsport section within the National Motor Museum at Beaulieu in Hampshire was opened to the public. Ribbon-cutting honours were shared by Sir Stirling Moss and Murray Walker, Mr Motor Racing ably assisted by The Voice of Motor Racing. Among a highly delectable selection of competition cars chosen to showcase both 'Grand Prix Greats' and 'Road, Race and Rally', the chief interest for BMW lovers is the actual Super Touring 320i taken to victory at both Spa and Macau whilst chiefly driven by Steve Soper. At Spa in 1995 he shared with Peter Kox and 'Smoking' Jo Winkelhock. The pairing of Soper and Kox returned in 1996 with Marc Duez, but managed 'only' a second place to the sister car driven by Müller, Burgstaller and Tassin, but at Macau for the Guia race the next year Steve took victory solo, beating Michael Krumm and Charles Kwan, also in a 320i, to the top step of the podium.

Although we are only talking about 20 years ago, it already seems astonishing that the same car was a front line factory competition car for more than two seasons, and yet that is exactly the case with this much celebrated BMW. At Spa, and for that season, the car ran as a Fina/Bastos sponsored car, but as with all BMWs running at Macau all the way up to 2006 and Andy Priaulx's third World Touring Car Championship securing run, the title sponsorship was A.S. Watsons, the retail arm of Hutchison Whampoa.

So, how come this car has ended up in Beaulieu

having emerged from a private collection and not from the bowels of BMW Classic's Munich HQ? That is quite some story! The car had barely cooled down after its race winning run back in 1997 when the sponsors held a presentation event for the drivers and team members over in Macau from Germany and the UK. At that event the drivers and team management were thanked and all spoke of their gratitude to their hosts. As a spontaneous gesture, the car itself was given to Watson's CEO Ian F Wade (a gesture reflecting the BMW dominance of the Guia race during the Super Touring era – of the 18 podiums available under those rules, BMW secured seven of them – more than any other manufacturer). The car was then shipped to the UK to join a significant private collection of motor cars. Over the years it had been commented upon and noted as part of that collection but, largely, forgotten about by enthusiasts.

Anyone who was interested simply presumed that it has passed into private hands, or been messed about with or even crashed and written off as is the destiny of so many former racing cars. But this car sat quietly, exactly as it had crossed the finishing line in Macau. It even had competition fuel in the tank still! All would have remained moribund and slowly aging until 2011 when the Goodwood Festival of Speed decided to mark the Super Touring era with a dedicated class at The Festival of Speed. The car was immediately in line for a call up and contact was made with Noel Butler of NCB Autocraft in Solihull.

He decided the job was not for him but recommended Tom Shepherd of GTS Motorsport as it was already running a similar Super Tourer 320i in historic racing. Tom came to the car's home and collected it, taking the drive back down to think about what was needed. "Bearing in mind that the car was completely as last raced we were conscious that whatever we did to it had to be sympathetic to its history," Tom told us. "I decided therefore to concentrate on bringing the car back to life slowly and with the emphasis on safety. We knew instantly, for example, that the tyres were the very ones it won Macau on! Given Steve Soper was going to be driving at Goodwood, we did not think that 14 year old racing rubber would go down well at all – so that was the first thing on the list!"

Once the car was safely in the GTS workshops, Tom and his team were able to get into the depths and quickly produced a short job sheet. "Basically, we needed to strip the engine, which is a full-on works 318 2.0-litre with double injectors and then deal with the fuel system that still contained the hi-octane brew that had been used at Macau! This had turned to jelly so we were forced to strip out the fuel lines and the tank, replacing with new only where completely necessary and reusing parts once we had stripped, cleaned and reassembled them.

"In all truth, this car was as good as gold. That's the advantage of an ex-works car – when it's properly built to start with, it makes my job a lot easier down the line!" The hardest task was taking the engine



“It was like stepping back in time. The seat, the controls and the all-important ‘feel’ of the car were exactly as I remembered them”



Aside from a few modern safety additions the car is completely original and just as it was when it came off the racetrack in 1997. It ran in this configuration for two seasons and was successful at both Spa and Macau



apart and making completely certain that every component had been checked and re-checked. A few calls to BMW itself helped with this as, naturally, it is a pretty specialised lump. Whilst GTS was perfectly happy that it had the skills and ability to do the job in-house, it was reassuring to the company to have BMW Classic stood at its shoulder or at least on the other end of the phone to reassure the team that everything was being done correctly!

Tom again: “Realistically, there was nothing that we had not tackled before, but in this exact context we had to ensure that every box was ticked and every i and t dotted and crossed! The only real surprise for me was when I realised that the car had two identities! We soon worked out it was a Fina/Bastos car as well as the Macau winner and that *really* focused us in.” The car was tested shortly before Goodwood Festival of Speed in July 2011 and given a clean bill of health. It was delivered safely to the Cathedral Paddock there and when Steve Soper walked up to the car for his first practice run on the Friday morning he commented: “It was genuinely like stepping back in time. I’d not set eyes on the car, let alone driven it, since Macau in 1997 and both visually and dynamically nothing had changed. The seat, the controls, the read-outs and the all-important ‘feel’ of the car were exactly as I remembered them.”

Steve was driving two different cars at the Festival of Speed in 2011, the Watson’s car and an official BMW entry. Sadly, due to unforeseen mechanical maladies, the BMW entrant was unable to complete

the full programme and so Steve used the Watson’s car to ascend the hill twice each day on Saturday and Sunday. “This car is important. Not just to BMW and motorsport, but also to me personally,” Steve told me at Goodwood. “Taking wins at Spa and then Macau in the exact same car is pretty remarkable. Spa is a team effort, of course, but Macau is just down to the driver to deliver out on the track. This car mastered both of those disciplines. It helped my CV massively and cemented my relationship with BMW – leading to my Team BMW Le Mans outing and my best-placed finish there of fourth in 1999. A really good car, with very few, if any vices. This car made Macau one of my absolute favourite circuits to race on.”

After Goodwood in 2011 the car, still carrying not just its Macau finishing livery but also its most appropriate Goodwood running number of 320, was returned to the collection in which it has lived for so much of its life since 1997. It has been turned over regularly, but not run on a track since.

In November 2014 it was suggested to the owner that he might like to let the greater world of car enthusiasts see the machine again and, whilst he was not keen to allow it to race in the revived Super Touring class, he was more than happy to let the car travel to Beaulieu and become part of the new motorsport exhibit. The car now sits in the main hall of the National Motor Museum, currently between a Bugatti Veyron and a Ford RS200. It looks in amazing, though race-used, condition and is still a genuine time warp as the pictures of the interior show. The

labelling is just as it was; even the Lufthansa Cargo label hangs from the rear view mirror and the key-ring is its Bastos/Fina one, issued by BMW when it released the car in 1995 – it even still has its spare key on that ring!

This highly important and hugely successful 320i Super Touring car will be on display at the National Motor Museum in Beaulieu until Easter 2016 at least. It sits proudly alongside some of the greatest machines from history, not just of motorsport, but of motoring itself, opposite the ‘Period Garage’ feature and, if the opening reception is anything to go by, it will be attracting a great deal of attention during its time in display.

The key, as identified by museum director Doug Hill is that “the Super Touring cars look exactly like road cars. Visitors can identify with them far more easily than with, say, a V16 BRM or a Lotus 49! It takes nothing away from Grand Prix winners or endurance racers, they have their well-earned laurel wreaths, but this BMW especially gives the illusion of ‘could have been me’ or perhaps more accurately ‘could have been my/our/dad’s car’. We are so pleased to have this fantastic car here with us and hope many visitors will enjoy seeing it over the next 18 months or so that it is on display with us.” ●

## Many thanks to:

Doug Hill and Heather Reid from Beaulieu  
Steve Soper, Tom Shepherd and Stuart Weir  
Dave Warburton and Ian Wade





The car now resides in the National Motoring Museum and it's in good company. Amusingly, the car still has its original BMW keys and tags and Lufthansa cargo label. Left: This is how the car would have looked in its previous Fina/Bastos livery from 1995. The car pictured isn't actually Soper's car though, this is the third placed Spa 24 Hour car from 1994 driven by Jean-Michel Martin, Patrick Slaus and Altfried Heger



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# SUBTLE SIX

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**According to BMW the updated 6 Series focuses on its sporting side but the updates it has made won't change the car's main role as the consummate GT**

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Words: Shane O'Donoghue   Photography: BMW

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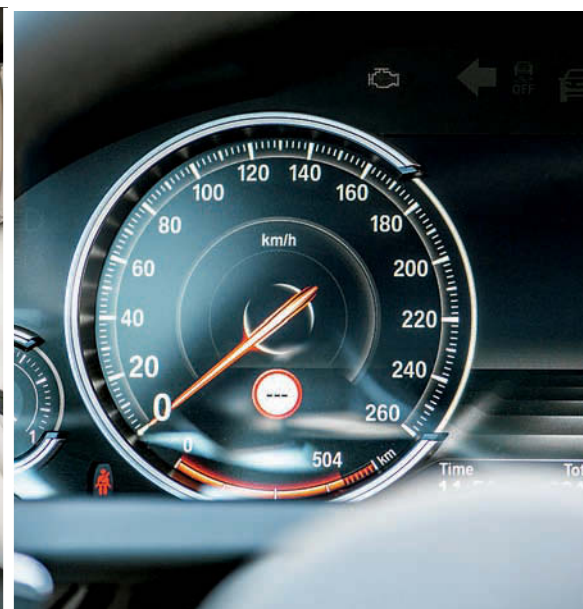
Given the exceptional success of the four-door 6 Series Gran Coupé, it's a little surprising to turn up in Lisbon to test the range's mid-life update and there's none to be had. Instead we can choose between a Melbourne Red Convertible or the Mediterranean Blue Coupé you see pictured here. Astoundingly, the Gran Coupé now accounts for almost half of all 6 Series sales, so perhaps it doesn't need a leg-up. In contrast, BMW UK sold only half as many 6 Series Coupés last year, at 729 units, a figure that's been steadily declining since the car's launch in 2012. Good timing for a revamp then.

But this mid-life update is, as is BMW's wont, a mild one. BMW's marketing bumf seems calculated to pre-empt our comments on that front by pointing out all the design awards the 6 Series range has already accrued. The subtext is 'if it ain't broke, don't fix it', so at a glance not everyone will spot the exterior design changes. Up front, the kidney grille has been subtly tweaked. There are now nine vertical bars in each of the wide openings, instead of ten, the intention being a visual widening of the nose. Those









uprights are black in the six-cylinder models and matt aluminium for eight-cylinder cars. More obvious is the new front bumper, with its wide black section shaped like that of the 4 Series range. It too adds to the impression of a wider car. Within that is a three-element LED fog lamp. Full LED headlights are fitted as standard across the range, the indicators have been moved to the top of the lamp unit and the light signature has been updated – it's now quite distinctive at night. At the side, the only real change (other than new wheel options) comes in the form of restyled door mirrors, incorporating the indicators. The

rear end is left well alone, too, other than a resculpted bumper, though the exhaust outlets have been enlarged a tad on the six-cylinder versions.

The updates to the interior are more difficult to spot – unless you're an existing 6 Series owner, of course. The black panel look to the air conditioning controls has been updated, as has the glass-fronted free-standing iDrive display screen. All versions of the 6 Series come as standard with dual-zone climate control, USB ports, Enhanced Bluetooth with voice activation, BMW Advanced Loudspeaker system, BMW Professional Multimedia, Park Distance Control,

leather upholstery with contrast stitching, heated front seats, electrically folding door mirrors, the new LED foglights and a minimum 18-inch wheel diameter.

Sport models are upgraded with 19-inch rims, a chrome finish for the exhaust tips and kidney grille uprights, and Nappa leather upholstery on 'Comfort' seats. The M Sport cars promise to be more distinctive again, gaining M double spoke alloys (still 19-inches in diameter – 20-inch rims are optional), an M Sport styling kit, coloured brake callipers and interior enhancements including a multifunction M Sport steering wheel and 'Sport' seats.

The engine can propel this large GT  
to 62mph from rest in just 4.6 seconds







All three body styles share the same core specification, though the Convertible benefits from Sun Reflective Technology for its Dakota leather trim, while the Gran Coupé's rear seat back splits and folds 60:40. As before, it's defined as a '4+1' seating arrangement, with the unlucky fifth occupant perching atop the raised centre section.

As ever, the cabin is a lesson in sporting luxury, with more of an emphasis on the comfort and quality than the sportiness. It feels like a lavish, extravagant car from the inside, which goes some way to justifying the lofty pricing. The entry-level model is the 640i, featuring the well-proven turbocharged in-line six.

That's £60,630 on-the-road in Coupé format, £62,375 as a Gran Coupé or a faintly eye-watering £66,760 for the 640i Convertible. For the mid-life face-lift this engine is more efficient than ever and it comes with a sports exhaust as standard, but those with an eye on fuel economy will stick with the best all-rounder: the 640d. That starts at £63,130, is just as fast against the clock as the 640i (faster in the mid-range thanks to its thumping torque output), and is far better in terms of economy and Benefit-in-Kind affecting emissions. It returns an official 54.3mpg and emits as low as 139g/km (as a two-door coupé).

The range-topper (excluding the BMW M6, which

### F13 650i M Sport

**ENGINE:** V8, 32-valve twin-turbo

**CAPACITY:** 4395cc

**MAX POWER:** 450hp @5500-6000rpm

**MAX TORQUE:** 479lb ft @ 2000-4500rpm

**0-62MPH:** 4.6 seconds

**TOP SPEED:** 155mph

**ECONOMY:** 32.9mpg

**EMISSIONS:** 199g/km

**PRICE (OTR):** £72,385







At a glance not everyone  
will spot the exterior  
design changes



has also been updated) is the 650i, powered as ever by a twin-turbocharged 4.4-litre V8 engine and it now costs £69,785 for the SE or £72,385 for the M Sport we have here. The melodious powerplant rumbles away quietly when you're ambling around, with just enough noise to make it obvious you're driving something interesting. And there's plenty of interest from an engine that can propel this large GT to 62mph from rest in just 4.6 seconds. That's thanks to 450hp at 5500-6000rpm and a beefy 479lb ft of torque on tap from just 2000rpm all the way around to 4500rpm. With such outputs there's no need to stir the gearbox but BMW's standard-fit eight-speed Steptronic sport transmission is, as ever, exceptional. It's perfectly smooth and refined when you're in no hurry, slipping between ratios seamlessly and enabling silky progress at low speeds. But step things up a notch and the gearbox responds in kind. Its calibration is altered depending on which driving mode you choose and you can slot the lever into the Sport setting or take over control for yourself via the paddles at any time. Full-bore upshifts are hammered home suitably quickly, while downchanges are punctuated by gratuitous throttle blips, justifying your V8 purchase.

BMW has tweaked the chassis of the 6 Series moderately too, with firmer rubber bushings, remapped power steering and retuned dampers. Unfortunately, the test cars at the international launch were all equipped with expensive driving options like Integral Active Steering and Dynamic Damper Control. The former adds a little rear-wheel steering, in the same direction as the front wheels for high-speed



stability and in the opposite direction for a more agile feeling in tight corners or for parking. So-equipped, the 6 Series certainly feels up the demands of a twisty road, with little effort required to make indecent progress. The only limiting factor seems to be the appreciable width of the car. Narrow, hedge-lined B-roads are not this model's natural habitat, although with the Dynamic Damper Control system fitted, owners can choose the appropriate damping for the road conditions, giving the car a wider operating window. It's effective and integrated with the usual Driving Performance Control switch on the centre console offering Comfort Plus, Comfort, Sport and Sport Plus options.

While the 650i is a bit of fun when the mood takes you, its girth and weight soon make themselves known, the latter when you start leaning harder on the brakes or ask for rapid direction changes. It competently handles it all, but you get the feeling it's being pushed outside its comfort zone. Dial the speed back a bit and it's at its best, a luxurious, stylish, well-equipped and rather desirable GT car, offering up fast transport for two with plenty of space in the boot for some suitably expensive luggage. Nonetheless, even if we didn't need the extra legroom and easier access to the back seats afforded by the Gran Coupé's additional doors, it's still the pick of the range. It's easy to see why it's 6 Series buyers' favourite model too ●



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# The Right Stuff?

Internet folklore would have you believe that a right-hand drive E30 M3 isn't a patch on the original... we sampled this example to find out the truth

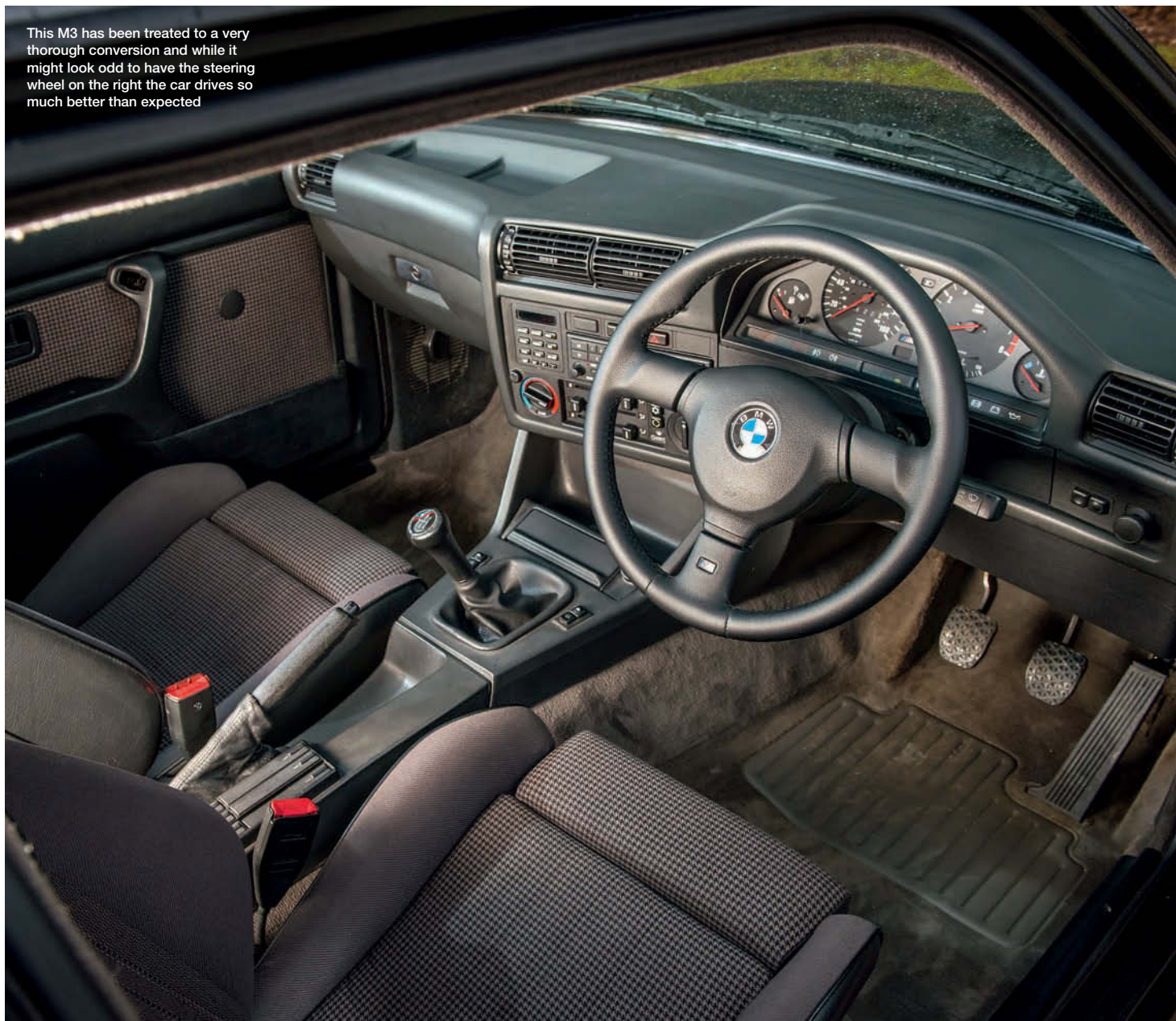
Words: Bob Harper  
Photography: Dave Smith







This M3 has been treated to a very thorough conversion and while it might look odd to have the steering wheel on the right the car drives so much better than expected



Over the years I've been fortunate enough to drive all sorts of E30 M3s, from the original 200hp machine through to a multitude of special editions and culminating with the legendary 2.5-litre Sport Evolution. There have been road cars and track cars and even several rides in ex-DTM and BTCC machinery and the one thing all these machines have had in common – apart from the obvious S14 under the bonnet – was the fact that they have all been left-hand drive. Until now, as the machine I'm currently sitting in is undoubtedly an M3, and is indisputably right-hand drive.

BMW only ever made the E30 M3 for general consumption with the steering wheel on the left bar a couple of machines for very favoured customers, and it would seem that the general consensus of opinion is that is the way they should remain. Or so folklore would tell you. But here today we have a right-hand drive version that was up for sale at 4 Star Classics a month or so ago and once I saw the car appear on its website I got straight on the phone to arrange a drive of the car. What I was particularly keen to find out was whether converting the car from left- to right-hand

drive would rob the car of its feeling of 'rightness'.

The main gripes those 'in the know' or those who have bought into the rumours on the internet will tell you is that an E30 M3 that was converted to right-hand drive back in the day will have a standard E30 steering rack that's 'slower' than the one fitted to an left-hooker and that the exhaust manifold also has to be compromised in order to correctly route the steering column. Valid points you could argue, or those who like to put things in stronger terms; 'the steering is rubbish and it has no power'.

The vast majority of UK M3s that were converted from left-hand drive to right-hand drive back in the late '80s were done by Birds in west London – it did 52 in total, many at the request of BMW main dealers – so we decided that one of the best placed people to speak with authority on the matter was Kevin Bird. The first point we tackled was the 'slow standard E30 steering rack' and while Kevin admitted that the standard rack was slower he didn't reckon it was all that much of a problem: "There's no doubt that the E30 325i's rack is slower, but I think everyone used to focus on the fact that if you sat a 325i on the ground and turned the steering wheel from lock to

lock it would be something like four turns lock-to lock whereas the M3 was only three and a half. A lot of that difference was actually because the steering rack on the M3 was limited – it had a limited stroke because there wasn't enough turn in the wheel arches for it to go any further." Looking at the stats for the two racks Kevin does have a pretty good point with the E30's rack rated at 19.6:1 compared to the standard car's 20.5:1, or to put it another way the M3's rack was slightly less than five per cent quicker.

"The steering rack bit never bothered me, what did bother me was that the steering wheel always seemed too big. If you put a 360mm steering wheel in the car it automatically felt like it had quicker steering. There's no doubt that it would have been nicer, and if we could have done it we would have done it, with the equivalent of an M3 rack, but there are so many other things that are germane to the driving experience that the steering is just probably five per cent of the problem," Kevin argued.

The second item we spoke about was the manifold and again Kevin reckoned that this had also been blown out of proportion: "You have to convert the manifold to get round the steering column," he





I'm greeted to the most delightful snarl  
from under the bonnet that on an E30 can  
only mean one thing – a carbon air box





## E30 M3

**ENGINE:** S14, four-cylinder, 16 valve, DOHC  
**CAPACITY:** 2302cc  
**MAX POWER:** 200hp @ 6750rpm  
**MAX TORQUE:** 177lb ft @ 4750rpm  
**TOP SPEED:** 145mph  
**0-62MPH:** 6.7 seconds

It's a delightful thing to  
punt along rapidly, giving  
plenty of feedback through  
the seat of your pants



The M3's S14 twin-cam might not be the most torque-rich engine but it thrives on revs and with a carbon air box it sounds absolutely divine





told us. "But the standard manifold is not a particularly nice piece of kit anyway and there are people who used to say 'oh yes, but the manifold is tuned', well, it's not really a tuned manifold at all – it's a bunch of bananas, but the primary lengths are really, really short and if you have a look at one of the race car exhausts it would have been completely different from that in the first place. In fact we never changed the primary lengths when we did them and the secondary lengths may have been increased by five millimetres, but nobody is going to tell me that is going to have much of an effect on outright power."

One interesting aspect that Kevin pointed out was that a right-hand drive car is *always* going to be something of a compromise if it was originally designed to be a left-hooker: "At the end of the day I would say that a left-hand drive car, *any* left-hand drive car, is going to be better balanced than a right-hand drive machine because the weight balance is set up for the driver sitting on the left so everything is compromised when you go over to right-hand drive – everything from the brake linkages to the wiper linkages will be changed from the original design –

there's so much that is compromised." But, and it's a big but, if you're going to be doing any enthusiastic driving on British A and B roads you'll probably go faster in a right-hand drive car for the simple fact that you can see more when sitting on the right. Sure, you adapt when driving a left-hooker and in most situations it'll be fine, but in something like an E30 that isn't desperately powerful if you want to be doing any overtaking you need to be able to see as much as possible.

And there are some governments around the world who firmly believe that if you drive on the left then you *must* have a right-hand drive car, and the two main proponents of this theory are Hong Kong and Australia where, barring the odd exception, you simply cannot legally drive a left-hand drive car on the road and it's for this reason that the majority of E30 M3s that were converted to right-hand drive have made their way over to those markets. However, despite the M3 sitting in front of us now having its steering wheel on the right this wasn't a Birds car – it's been converted fairly recently on the instruction of a buyer in Hong Kong. Eventually he decided not to

go ahead with buying the car and 4 Star Classics took it into stock. It was initially doubtful about how well a right-hooker would sell, after all anyone who knows their onions *knows* that the left-hand drive ones were better, right? Much to 4 Star's surprise the phone didn't stop ringing with enquiries about the car, and yes, you've guessed it, all the potential purchasers were from Hong Kong or Australia!

Fortunately we managed to get down to 4 Star's HQ prior to the car being shipped off to its new home overseas and at first glance the car just looks like a very tidy Diamond black M3. Look a little closer though and even though you know it's been converted you have to do a bit of a double take when you clock the steering wheel on the right-hand side. You might also note that the wipers have been converted to a right-hand drive setup too – there's obviously been some attention to detail here.

Firing it up for the first time before I rush off to try to beat the weather that's increasingly threatening to ruin the day and I'm greeted to the most delightful snarl from under the bonnet that on an E30 can only mean one thing – a carbon air box. It threatens to





dominate the driving experience as I'm an absolute sucker for the fantastic induction roar you get from a carbon air box and there's a very strong temptation once I'm under way to simply speed up and slow down, flicking up and down the dog-leg five-speed gearbox to hear the engine play its tunes.

I do eventually manage to stop being so puerile and concentrate a little more on the driving experience as a whole and once we're off the major roads and on to the lanes the M3 starts to come a little more to life under me. The conversion seems to have been carried out very effectively and there aren't any rattles or squeaks coming from the dash, and about the only rattle is actually coming from the parcel shelf area where a rear sunblind doesn't seem to be located perfectly. It's a minor irritation though and simply dropping down a cog to make the S14 sing under the bonnet stops it from becoming annoying. As I ramp up the speed a little and a few corners are thrown into the mix I start to really enjoy this M3 and what is a surprise is that it's the steering that's the main delight as it seems to be very sharp and incisive with the M3's nose following commands

perfectly. It doesn't take long to realise that there's no way this is a standard E30 steering rack and then it dawns on me – there are now far faster BMW racks to choose from for an E30 M3 right-hand drive conversion than there were back when Birds was converting the cars. I reckon this has the rack from a Z3 1.9 which at around 2.7 turns lock to lock is massively more direct than the standard M3 article, and when I return the car to 4 Star it is able to confirm that yes, this car was indeed fitted with a steering rack from a Z3 when it was converted.

We've failed to beat the rain en route to our photoshoot and while the Bridgestone rubber grips well there's enough moisture about and enough grunt from the engine to get the chassis working nicely. While we're not on the lock-stops around every corner it is a delightful thing to punt along rapidly, giving plenty of feedback through the steering wheel and through the seat of your pants. This particular machine has the hound's tooth cloth and it's much better at holding you in place when pressing on than the leather set up many cars are equipped with.

Once the pictures are in the bag we head back to 4 Star Classics and en route we cogitate on whether a right-hand drive E30 M3 actually makes sense. Obviously if you live in Hong Kong or Australia the answer's a resounding yes. In the UK though the E30 M3 has become caught up in its own hype to a certain extent and values have gone what could be termed absolutely bonkers. Even tatty ones are advertised for crazy prices and mint low mileage Sport Evos are now being offered for six-figure sums and these cars will only be able to command this sort of money if they're absolutely standard – swapping the steering wheel to the opposite side of the cabin would be a big no-no. But if you want to actually drive your E30 M3 then on the merits of this super Diamond black example there seems to be absolutely no reason not to bag a right-hand drive version if you can still find one ●

#### CONTACT:

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# The Underdog?

Can't quite stretch to a 1M? Ersan Jafer proves his 450hp 135i could be a more affordable, yet rapid, alternative...

Words and pictures: Adam Tait









**A**s an introduction to BMW ownership, the 135i isn't something that's going to disappoint, but when you've hankered after a 1M, the factory 306hp may not quite cut it...

This was Ersan Jafer's dilemma, he wanted what he couldn't have, but he also knew that making a 135i look like its more potent M brother wasn't solved with a simple bumper and wheel swap, it included extensive bodywork as well. However, during his search, Ersan found this 135i online and happily it had already been given a full 1M aesthetic transformation from a shell that had been written off due to a front-end impact. This included all the exterior cues and the Alcantara interior.

The previous owner even went to the trouble of removing the hunched rear 1M wings from the damaged shell and grafted them on to the 135i, along with the rear bumper. Whereas the front wings and bumper had to be sourced from BMW as they were too damaged to salvage.

To match the 1M's wider track over standard, the suspension and wheels were also carried over to replace the 135i's factory kit. At this point the car was Alpine white but the owner booked it in for a colour change to the subtle metallic twist of Mineral white. In its finished state the only cue that makes it a 135i is the sunroof, which wasn't an option on the 1M.

Understandably, Ersan jumped at the chance to go and see it, and made the journey from the south-east up to Birmingham as soon as he could. Impressed with the work that had gone into the car, a deal was immediately done. Back home, Ersan then got to work by freeing up the N54's 306hp power output, which is pretty conservative for a 3.0-litre twin-turbo straight-six.

Between speaking to UK specialists and reading motoring magazines, extensive research was done via US-based owners sharing information, as according to Ersan, they seem to be leagues ahead of UK owners when it comes to tuning and aftermarket parts availability. Faced with a multitude of suppliers to choose from, these resources enabled Ersan to sieve through what did and didn't work from those who had already gotten the T-shirt.

One recommendation was to have the intake valve cleaned as this gets clogged up with carbon deposits, causing a loss of power, rough running and a lumpy idle which became apparent on this engine. BMW has an approved walnut shell media to clean the valve, and beyond dealerships there aren't many

specialists that take on the job. However, Ersan managed to book the car in with Buckinghamshire based outfit, Birds UK.

With a clean bill of health the 135i then visited Evolve for a remap, which resulted in 350hp on the rolling road – already enough to trouble a 1M. Ersan enjoyed this newfound pace for a while but he soon became used to what was on offer, so the N54 was readied for its next stage of tune.

Firstly, aFe air filters were ordered from America, which according to Ersan are regarded to be one of the best for a power increase. Then, the plastic factory charge pipe – which is prone to cracking – was changed for an aluminium CP-E alternative and coupled to Forge diverter valves.

The car then developed the dreaded wastegate rattle. This is a common fault on the N54, making itself known on deceleration, and it was enough of a problem to be a recall in America. To give the turbos longevity, Ersan posted them to Vargas in America where they were rebuilt to Stage 1 specification.

This conversion consists of uprated wastegates, a billet compressor wheel, and clipped turbines to help both power and durability. Everything imported from the US was received within two to four weeks and even with duties Ersan commented that the parts were still good value.

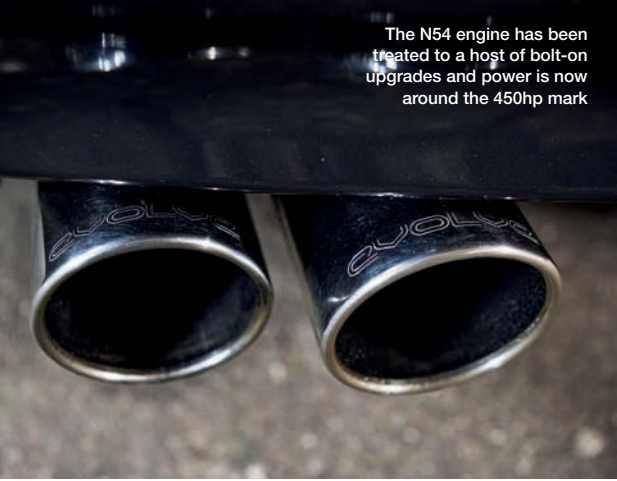
Every part bought from overseas was enlisted to Kent-based ETA Motorsport to change or fit. When the new Vargas turbos touched down, they were fitted and followed up with de-cat pipes. "I noticed a big difference when the de-cat pipes were installed because the engine became a lot more responsive," Ersan tells us. "The only issue was the oxygen sensors which the guys at ETA had to relocate, but it was still a worthwhile modification."

A cat-back exhaust from Evolve completed the system and we can vouch that it sounds fantastic, without being deafening. To reduce intake temperatures, Wagner Tuning supplied a larger intercooler, and although the front bumper needed cutting to accommodate its dimensions, the black anti-corrosive coating means it goes largely unnoticed. Making a nice change over the usual bare aluminium and blue silicone elbows.

With the car in daily use, any changes couldn't be detrimental to reliability, and with around 450hp already on tap Ersan thinks he's on the cusp of that at the moment. Not long before our shoot, the clutch started to slip, so this was replaced for a South Bend Stage 2 racing clutch (sourced from the US and rated







The N54 engine has been treated to a host of bolt-on upgrades and power is now around the 450hp mark

“I noticed a big difference when the de-cat pipes were installed because the engine became more responsive”







to 500hp). "It's an on-off clutch so I'm still getting used to it but it should last well because of the power rating, my left leg is suffering though!" he laughs.

We had a taster of how the car performs as it squirmed its way from a standstill on a derestricted stretch of road – its twin-turbos minimising lag and the wide Michelin Pilot Super Sports doing their best to find traction. It's a genuine flying machine. "I used to run Pilot Sport 2s," Ersan informs us, "but I switched to Super Sports, and the car feels a lot better now in the dry and wet."

With the new clutch harnessing all the power and fresh boots transferring it to the Tarmac, the next weakness revealed itself as the factory open differential. Whereas the 1M was treated to a proper limited slip-differential, the 135i didn't have such niceties. "I think the 135i should have been fitted with one from standard," he states, "but I contacted Birds again as I had read a lot about Quaife ATB

diffs and with all the power the differential was a necessity really." So Ersan opted for a Quaife unit which was recently fitted. Although the car hasn't done any track mileage on this setup, he claims it's made real use of the power, removing the frustration of one tyre being lit up.

With the exterior and mechanicals up to scratch, it was the 1M interior that lacked one thing in Ersan's eyes: a build plaque. While it's not a factory 1M he still wanted one as he felt it wasn't complete without it. "I got into a bidding war on eBay, because when they do come up a lot of people want them as they were an option from new," says Ersan. "It finally finished at £340, but I'm a bit of a perfectionist when it comes to things like that!"

It was Ersan's older brother Hasan who got him into BMWs, and he puts it down to his E30 M3 as the car that really sparked his interest. After owning a string of modified BMWs, naturally aspirated devotee

Hasan has ended up with an E46 CSL, but how does he think his younger brother's blown 135i stacks up?

"I think if it was a big single turbo he wouldn't like the lag but with twin-turbos the power delivery is much more linear on the N54, so actually he really enjoys it," Hasan tells us.

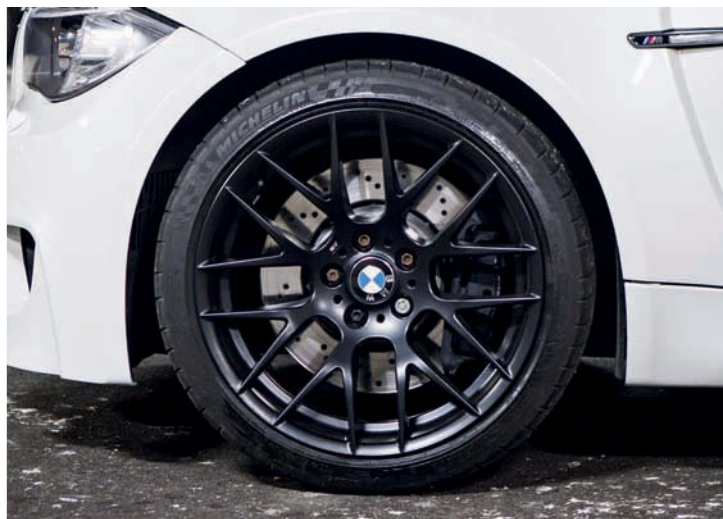
While it may not be a fully-fledged 1M, it's certainly ironic that Ersan has developed this stunning 135i into something that will now out-perform the car he really wanted. Certainly in terms of straight-line capability, but it won't fall behind in the twisty bits either thanks to its 1M suspension and brakes.

Admittedly, this 135i has been subject to extensive bodywork to really complete the menacing stance of the 1M, but Ersan's mechanical tuning approach can be applied elsewhere. Perhaps by the 335i owner wanting the V8 oomph of a E9X M3, or the 135i owner who also dreams 1M? Dreams that may just fade away when the underdog serves up 450hp ●





The bodywork is all from a genuine 1M but it's been painted Mineral White, instead of the usual Alpine White



## E82 135i

**ENGINE:** 3.0-litre straight-six N54, Vargas Stage 1 twin-turbos, CP-E de-cat downpipes, Evolve cat-back exhaust system, CP-E charge pipe, aFe air filters, N55 mid pipes, Evolve remap, Wagner Tuning intercooler

**SUSPENSION:** 1M factory suspension

**BRAKES:** 1M factory brakes

**TRANSMISSION:** Stage 2 South Bend clutch, Quaife ATB differential

**WHEELS & TYRES:** Staggered 1M wheels/Michelin Pilot Super Sport tyres

**EXTERIOR:** Painted Mineral White, 1M arches, front and rear bumpers, 1M wing mirrors and headlights, Darkline rear lights

**INTERIOR:** 1M interior; plaque, dashboard, iDrive, retrimmed Alcantara steering wheel

“I used to run Pilot Sport 2s but I switched to Super Sports, and the car feels a lot better now in the dry and wet”





Everyone wants to be better at driving, but what makes a good driver? Someone who possesses the ability to set a blistering lap time? Or gracefully power-slide around an airfield perhaps? While both may be valid skills becoming a better driver starts with the obvious; driving on the road. It's where everyone does the bulk of their driving, so it makes sense to start here.

That's where Rob Colbourn steps in. Rob is an accomplished instructor and Advanced Driving Consultant with over twenty years of experience in his field. He offers tailored courses and one-on-one

tuition for those wanting to gain more from the art form of driving. Rather than teaching how to throw a car around with armfuls of oversteer and plumes of tyre smoke, Rob simply helps you to expand and develop your current driving style in order to get more out of road driving. In short, he teaches you how to read the road more efficiently, enjoy the road more effectively and, above all, drive safely not only for you, but those around you.

Rob actually started his career with rather humble beginnings working as a white van driver, but it's that experience which has helped him shape and develop

his current approach. "We all form our own personal relationship with driving," explains Rob. "Within a year of passing my test I was racking up 80,000 miles a year driving white vans all across the country; admittedly, my skill didn't always match my enthusiasm! After several years of that I answered an advert to become a driving instructor – I certainly didn't set out on a quest to increase road safety. The people who trained me did a good enough job and helped me to qualify, but in all honesty, they didn't have any significant influence on my relationship with driving. It was two months into the job when I met





# *Training Day*

**We explore the finer points of honing your driving skills during a day of training with advanced consultant Rob Colbourn...**

Words: Simon Holmes Photography: Dave Smith

Bernard Aubry, a man who quite simply revolutionised my view of driving and inspired me in a way that I hadn't conceived or experienced before. Yet, if you asked me what was taught immediately afterwards I would struggle to recall many of the specific details, so struck was I by the deeper sense of satisfaction in my driving he had ignited. But whatever the details were, they would have been redundant and short-lived if the techniques themselves hadn't inspired me to use them. Imagine it's three years on, you're late, fed up and no one is







**While Rob is indeed gauging your driving style, it immediately becomes clear this is no driving exam**

watching: this is when your personal relationship with driving will dictate your style and choices."

Rob's main work varies between private clients, who drive their own high performance cars on the road and want to get the best from them, to training fleet drivers who spend hours on the road perhaps involuntarily at times. A lot of what he teaches also lends itself to circuit driving, so it helps that he also happens to be a driving consultant for Porsche, working at their flagship venue, the Porsche Driving Experience Centre at Silverstone. On the opposite end of the spectrum, Rob is also a senior trainer with All Road Training ([www.allroadtraining.co.uk](http://www.allroadtraining.co.uk)), a leading provider of driver training to businesses. The enthusiasm may differ between the two groups but Rob's goal is the same; to develop their skill levels, techniques and attitude.

Keen to experience Rob's approach firsthand, we arrange a day of advanced driving training for the road. We meet on a sunny Tuesday morning at a location that's convenient for us both and I've brought my own car along for the day. Over a coffee, we have a chat about what we want to achieve from the day, before heading out into the mid-morning traffic.

At first, you can't help but feel as though you're on a driving test again, but while Rob is indeed gauging your driving style, it immediately becomes clear this is no driving exam. Instead, he engages you to discuss what's going on around you and it soon becomes easy to tune into his relaxed, yet professional approach. It helps that Rob is very articulate and incorporates a friendly tone to his advice that doesn't ever feel condescending. He praises you when appropriate and it never feels as though he is poking

holes in your driving or confidence. The information he dispenses is awe-inspiring at times in that it's often staring you right in the face, it's just you haven't thought to digest it before. He points out the glaringly obvious, natural markers on the road to help you read ahead, such as the fact streetlights are nearly always placed on the outside of corners or telephone wires indicate built up areas. It's a little like discovering there's a secret world of advanced driving that you never knew about. Informative hints and subtle changes to attitude may be small, but the process allows you to take every little thing on board around you, however miniscule, to give you the advantage.

Rob's approach is refreshing and enlightening, but he's also realistic about how his attitude and advice is likely to be utilised on the road. "I know perfectly well that every technique, idea or concept will have







## The Building Blocks

Rob explains to us the fundamental aspects of enhancing your own driving ability...

### Attitude

"I love the story Jackie Stewart writes in a book, about how he felt it was only when he entered the 1973 season that he had reached a 'fundamental grasp of the basics', even though he entered that season as a double world champion. It strikes me as a comment based on reflection and wisdom that may not have been so easily conceived at a younger age.

"This is also the main reason that I reference my 'chequered' past in vans. It was primarily an attitude shift that changed my approach, which led to all the various physical changes in my driving style.

"I also highlight my own natural cynicism and encourage clients to question and challenge my advice to see where it works, where it is limited and what adaptations could be made with any technique to ensure its effectiveness. Incidentally, this is often lacking in my industry, which would seemingly prefer to demand we accept each piece of advice in its entirety. Remember being taught to apply the handbrake and select neutral each time you stop? How about leaving enough space ahead in a queue in case you get hit from behind, in order to protect the radiator instead? Or how about I focus more on protecting my children in the back seat?"

### Observation

"As with so many things in life or work; the further ahead you can look, the more detail you can gather with which to make your plans and the more time

you can create in which to execute them, the more effective you will become. Many of the subtleties I look for are so visible and ordinary that we easily overlook their significance or existence.

"A brilliant realisation I have learnt to develop more over the years is how to utilise the human eye's natural functions of peripheral and focused vision, in order to see as much as is physically possible. Consider whether you pay primary attention to the road layout as you approach a junction or to the traffic movement. Looking firstly for the static information will still allow your peripheral vision to monitor the movement within your scope, whereas focusing on the traffic will likely make you miss helpful information about the environment in general. The natural tendency, of course, is to watch the vehicles and pedestrians as they are more likely to cause you a problem than a static kerb or signpost, and the art of developing this concept and the observation techniques is in how you balance both issues."

### Anticipation

"For me, good anticipation skills are based on asking yourself intelligent questions about the situations you face. Is that guy going to step out? Is that car going to change lanes? Is there a removal truck around the next blind corner? The obvious problem here is that you can pose the questions but not necessarily answer them.

"In fact, you positively have to wait to find out what they actually will do, but you can certainly anticipate what they could do; especially when you consider that there are only two possible options.

Will he step out? He will or he won't. Will that truck be there? It will or it won't. You simply need a Plan A and a Plan B. Anticipate the greater problem and then (in a statement that I wouldn't have understood at 21) you actually want your anticipation to be wrong. By which I mean, of course, I may well be expecting the worst-case scenario and I certainly don't want to experience it, but if I must, then I will prevent it from catching me out. So I'm either wrong or pleasantly surprised."

### Space

"In regard to the practical side of driving, space is the thing to be obsessive about; after all, every single collision in the history of the motorcar must involve at least one party running out of space. But to do so requires you to have made serious misjudgments in one of the other areas mentioned. Your observation, anticipation or planning has let you down first for the speed to then become a problem and, if those skills are used well, then you should simply realise that your speed is appropriate.

"One of the biggest problems is that people also think that slowing down will always be the safer option over speeding up. This does not apply in many situations, joining fast moving motorway traffic to name just one. Whether you speed up or slow down should be dictated by the space that is available. The key thing for me is how the relationship between your space, vision, speed and time is managed. Only when you put all these factors together are you really considering things in enough depth to truly judge the accuracy and effectiveness of your speed."





its limitations; speeding up may one day be your saviour and the next day be your ruin," explains Rob. "If I tell you to 'always do this,' or 'never do that,' then I am doing you a disservice – exceptions to the rule are commonplace after all. In fact, just 'telling' you to do anything at all would soon get very tedious for everyone involved, much better to simply discuss and explore the art of driving high performance motor cars with the aim that you aspire to be the best, most accomplished driver that you can be, and hopefully benefit from the competencies I strive to impart to each and every one of my clients. My point is, if I can't genuinely inspire you to embrace and develop safe, smooth and swift driving skills then, quite frankly, who cares where I said to put your hands on the steering wheel or whether to select neutral at the traffic lights?"

As we venture out on to faster A- and B-roads, perhaps Rob's most interesting points revolve around driving psychology. It sounds strange, but once he

persuades you to try certain techniques it's amazing to see it work in action. For instance, controlling the traffic behind you by dropping back from a line of cars and, effectively starting your own pack, helps to control other road users' driving characteristics.

I leave Rob feeling rather good about myself. It's a lot of information to take in, but the things he points out are easy to introduce into your driving style, and like he says, attitude is perhaps most important. Reflecting on that, if there's one key lesson of the day it's that everyday is a school day. Driving is the kind of skill that never stops developing and you can always better yourself. Perhaps acknowledging that is what makes a truly great driver ●

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It's a little like discovering there's a  
secret world of advanced driving  
that you never knew about





# A STEP INTO THE UNKNOWN

The Nürburgring 24 Hours is one of the toughest events on the motorsport calendar and here we meet a British team entering the race for the first time with an E36 M3

Words: Bob Harper Photography: Bob Harper and Frozenspeed (VLN track images)

For some people having a quick blat down their favourite back road is enough to satiate their inner driving Gods. For others, the occasional track day will give them enough of an automotive fix. And some take it a little further still and involve themselves in racing, usually starting off with UK circuit championships. For most, this is where it ends. Simon Glenn, owner of this E36 M3, wanted to take things even further, though, and last year, along with friend Marcos Burnett and Jody Halse (of Climax Motorsport who prepares the car), they took on several rounds of the Veranstaltergemeinschaft Langstreckenpokal Nürburgring (which is better known as the VLN) on the infamous Nordschleife in Germany. And this year they are eyeing-up an even greater challenge: the Nürburgring 24-Hour race.

So how on earth did the occasional track day escalate into an assault on one of the world's toughest endurance classics? "It's all Jody's fault," Simon says with a laugh. "A few years ago Jody got me into racing and I did a season in the Production BMW championship in an E30 that he built for me and unfortunately I wrote it off at the Craner Curves at Donington in the last round of the season. This was back in 2012 so as I didn't have a car to race in 2013 and as I fancied doing something a little different I spoke with Jody about our options and we came up with a plan to try and do something at the Nürburgring. Jody looked at the various classes of

racing and after we'd settled on the VLN the most obvious car seemed to be an E36 M3."

The car was also a 'good fit' as far as Simon was concerned as he's owned an E36 M3 GT for the best part of a decade and after having enjoyed racing his E30 another BMW was the only way to go. The main competition in the M3's class in the VLN comes from 3.0-litre Z4 Coupés and E90 330i Saloons but Simon was sure he wanted to use an M3, as he explains: "I enjoy the fact that the E36 is now a bit of an underdog and it's also a proper M car. My everyday car is a 3.0-litre E90 – it's something I drive to work in and wasn't something I particularly wanted to spank around the Nürburgring."

So in the latter part of 2013 Simon asked Jody to go and have a look at some E36 M3s with a view to turning it into a race car and when a 3.0-litre Coupé turned up in the classifieds relatively locally Jody went to see it. There were some things against it such as evidence of a small accident, although it looked to have been repaired to a good standard, and combined with the fact it was a low-mileage machine – just 58,000 miles on the odometer with history to back it up – Simon and Jody took the plunge, securing the car for around £4000.

In the VLN the M3 would compete in Class V5 which is for standard production cars up to 3.0-litres, which is one of the reasons Jody pointed Simon away from buying a 3.2-litre M3 Evo as this would move them up a class and make the racing much, much











tougher, as Jody explains: “We’d really get our arses kicked if we moved to the over 3.0-litre class as we’d be up against a host of Porsche 911s, E46 M3s and E90 M3s, and a 3.2 E36 M3 would really struggle against that lot!”

Once the car had been purchased there was plenty to be done to get it ready for a season of VLN and even though they didn’t want to commit to the full ten rounds of the series, Simon and Jody did want to try and do half the rounds which would mean around 30 hours at full chat around the ‘Ring once qualifying for each race was taken into account. It was for this reason that they’d looked for a low mileage car as they didn’t want to have to rebuild the engine, gearbox and differential, as these are expensive items to refresh prior to the racing season. It proved to be a good move as mechanically the car was utterly reliable, as Simon recalls: “BMW knew what it was doing when it designed the thing. The car must have done around 30 hours at full race speed but it never even noticed!”

To get the car ready for racing Jody stripped it to a bare shell, threw away everything that wasn’t needed,

sent it off to Custom Cages to have the latest 2014-spec cage installed, fitted a KW fully adjustable suspension setup and generally made sure that everything was in tip-top condition and that it adhered 100 per cent to the regulations for the class. The engine, ‘box and diff have to be standard and brakes have to be the standard dimensions of the road car, these have now been upgraded to Evo-spec as Simon and Jody discovered they were getting an awful lot of cracked discs with the 3.0-litre stoppers. The clutch is a Group N item and the car runs cats in the exhaust (this is mandatory for German championships) with a Supersprint rear section.

At the end of the VLN season the team could look back with pride as the car had been utterly reliable, suitably quick and hugely enjoyable to drive. Listening to Simon talk about the season you can hear the excitement in his voice as he describes racing on the hallowed circuit: “At around five o’clock on a Saturday afternoon and the sun’s starting to set and you’re flying down the Döttinger Höhe [the track’s longest straight] at 160mph and there isn’t a car in front or behind you and you can’t help but think ‘wow, does

life get any better?’ and then a front running GT3 car comes blasting past you at getting on for 200mph and it kind of wakes you up! It’s absolutely extraordinary. You get to hang around in the pit lane with people like Nick Heidfeld and Gabriele Tarquini – he was in the pits next door to me and you think to yourself ‘I used to go and watch him racing and watched videos of him’ and there you are as an amateur guy who likes a bit of racing rubbing shoulders with these incredible drivers. It’s the only series where you can effectively drive and ‘compete’ with fully professional drivers.”

And having hugely enjoyed the VLN, Simon and Jody decided to embark on the big one: the 24 Hour race. An intensive program of organisation and car fettling ensued. Wading through the paperwork was pretty intensive when compared to the VLN (which was actually pretty straightforward) but two big decisions had to be made. First, what to do to the car prior to the 24-hour race? And second, how to improve the car’s only Achilles’ heel, it’s poor fuel economy? In the end a full strip down of the car was deemed to be necessary and, as Jody explains, it was



**Left:** ATL bag tank will allow the M3 to run an extra lap between fuel stops.  
**Centre:** Adjustable top mounts for KW suspension. **Right:** Beautifully prepared boot area will have to be altered to accommodate new fuel tank





“It took me a couple of months to get up the motivation to pull the car apart because it was running perfectly”



Interior simple but effective. Roof-mounted transponder allows the car to be tracked by the organisers. Pit shot shows huge diversity of VLN machinery





a little heart-wrenching to take a perfectly good and reliable car, take it to bits and rebuild it: "That's part of the frustration of the 24-Hour race – it took me a couple of months to get up the motivation to pull the car apart because it was running perfectly and you start to question what you're doing. I had to remind myself that although it's running well, it might not be running well enough to go like that for 24 hours. Actually it's more than that as there's also seven hours of qualifying so the car has to last for 31 hours in total. 31 hours at 7500rpm is quite a long time, especially when you've got all the bumps and the jumps thrown into the mix. It's asking a lot of anything, let alone a 20-year-old car! So we pulled it apart and now it's having everything done." The engine's been refreshed with new seals, gaskets, bearings and a new timing chain and the gearbox and diff have both been stripped and refreshed, too.

The car's biggest problem, though, is that while it was competitive in terms of pace and lap time in the VLN, its *bête noire* was its fuel economy, as Jody explains: "The big thing that cost us last year in the VLN was fuel consumption and the bottom line is that we use an awful lot more fuel than the other cars in the class because it's an older car and because it's

heavier, too. The trouble is that the car industry has moved on significantly since the E36 was built and the Z4s and 330is we're up against are much lighter, a little less powerful and, significantly, all have aluminium engines so they tend to handle a lot better than the E36 does. VLN (and the 24 Hours) have this Balance of Performance thing which means we have to carry an additional 70 kilos of ballast because the rules say we have a more powerful engine – even though it's only 20hp over a Z4. But the most significant problem we have is that we use a lot more fuel. In a four-hour race a Z4 can stop twice and we have to stop three times – they can do eight laps on a tank and we can only do six. That cost us better results in the VLN races."

Within the Balance of Performance rules there is the possibility that weight can be added or removed from cars in the same class and it also states that fuel capacities can be increased or decreased. However, Jody says that despite arguing with the authorities that the M3 should be allowed a larger fuel tank than the Z4s and E90s his arguments have fallen on deaf ears. "I don't want to be able to do more laps than the other cars, just the same amount of laps," he says with a resigned shrug, but sadly his arguments have

failed to have any impact. Undeterred Simon has shelled out over £3000 for a new ATL bag tank that holds 70 litres (the class maximum), replacing the 62-litre standard tank the team was using last year. As Jody puts it: "Now we'll be able to do seven laps at a time but still not the eight that the Z4s and 330is can do... but over the course of the 24-Hour race we should be able to make three fewer pit stops."

While Jody's built the car and will be in charge of bringing spares and the like, Simon and Jody decided to enlist the help of a German team, Kuepper Racing, who will act as pit crew and will provide an articulated lorry, mechanics, chefs and an all important sleeping area. Despite this, Jody still reckons that if the car needs a new gearbox during the course of the race he'll still be the first one under the car. Having a team to look after the wheel and tyre changes and the general running of the car, though, will allow Jody to concentrate more on his driving.

Despite having done the VLN races it's still a bit of an unknown when it comes to what to expect at the 24-Hour race. What will tyre wear be like? How long will the front discs and pads really last? Will the rear pads need doing? Jody reckons he knows the answers: five hours for a set of slicks if driven





relatively sensibly; 12 hours for the front discs – but there could be so many variables that enter the mix in the space of 24 hours that he's sensibly trying to plan for the unexpected.

A huge amount of time and effort has gone into preparing for the event and it has to be said that to simply be contemplating doing the race at all takes a lot of courage. It's part of the joy of the 24-Hour race, though, that an amateur team can still become involved and, depending on how many cars are in the class, the Climax Motorsport-built car could still be in with a chance of a class podium or a class win.

We'll leave the final words to Jody and Simon... "We're a team of amateurs. One man has effectively built the car and we're just a couple of blokes who like a bit of motorsport. But I really do think we're in with a chance of winning the class, I really do," says Simon enthusiastically.

"Short of writing a cheque for hundreds of thousands of pounds to buy yourself a drive at Le Mans this is realistically the biggest race that normal mortals like us will be able to do. There's nothing bigger or more prestigious that's achievable by a clubman than the Nürburgring 24-Hour race," agreed Jody. Fingers crossed chaps, and good luck! ●



The E36 M3 looks completely at home on the Nordschleife. Right: Our team of hopefuls during last year's VLN



"You get to hang around in the pit lane with people like Nick Heidfeld and Gabriele Tarquini"





# What's involved?

## E46 M3 air filters, induction kits and intakes

With so many options on the market, choosing the right air filter option for your E46 M3 can seem like a daunting prospect, but it needn't be...

Words: Simon Holmes Photography: Various



**Y**ou could argue that fitting an aftermarket air filter is a simple case of basic engine tuning. Supplying the engine with freer flowing, less restrictive and colder air helps create more power. So for most cars, upgrading the standard air filter is the first stage in modifying, but for a car such as the E46 M3 there are so many to choose from that it's not quite as easy sifting through the viable options, deciding what is best and then choosing which is right for you. The different types and designs all make a

difference to the sound, power, performance and even aesthetics. But it's worth knowing that some filters can decrease performance as easily as they can improve it, due to heat soak or airflow. Each type of upgrade has plus points and downsides depending on the application, requirements and cost, so here we will go through the different types and why they are suitable. For the purpose of the feature we will differentiate them into groups, but be aware induction kits can be referred to simply as air filters and air boxes are often labelled as intake systems.

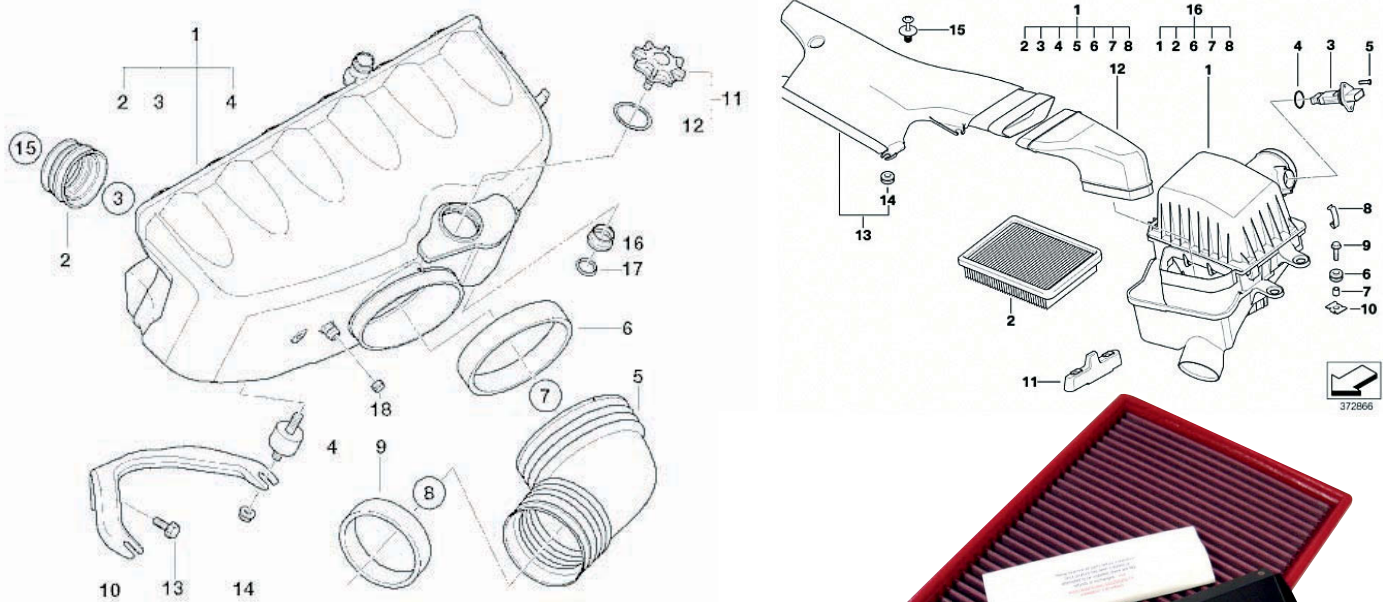


## The Standard Set Up

The E46 features a fairly complex but effective system. The journey starts when fresh air is forced into the intake that is mounted directly behind the kidney grilles. The intake then channels the air across the top of the front panel and down into the airbox mounted on the right-hand side of the engine bay. Here the air is forced to pass through a flat, paper element filter to remove any unwanted particles of dirt. Air then exits the box at the rear and feeds into a single, large diameter flexi-pipe and it is here the all important MAF sensor is mounted. This vital sensor helps the ECU measure the amount of airflow the engine is ingesting before making alterations.

The flexi-pipe connects to what BMW calls an air collector, which is the large black box mounted directly to the side of the engine. The air collector is attached to the engine's individual throttle bodies, via six separate connectors and once there, the air can be drawn through the inlet manifold and into the engine's combustion chamber.

BMW suggests replacing the air filter at every Inspection II service, roughly around every 40k miles. However, specialists generally recommend to clean, replace or at least inspect the paper filter far more regularly than that, some suggesting as often as every 5000 miles. Replacements cost around £10 to buy.



## Replacement Panel Filters

The first upgrade is a direct replacement, aftermarket performance filter element, known as a panel filter. These come in a range of different styles and materials depending on the make, but all generally improve breathing and filtration over the original item. They are cheap to buy with costs ranging between £30 and £60, and are easy to install or remove, taking just minutes to fit. But simply replacing this filter will not create miracles.

Power and performance will be marginally improved on paper, but realistically, there will be little noticeable difference on the road, although modifying the airbox to draw in more air via additional ducting can help. Sound wise, there will also be virtually no difference and nothing changes from an aesthetic point of view either. Although it may sound like a replacement panel filter doesn't do a lot, it's exactly for that reason that some owners prefer them from a practical point of view. It's a genuinely viable alternative to a standard filter, as the better types come with a lifetime warranty as the elements can be cleaned and re-used, unlike an original BMW filter. It's also guaranteed to work and won't suffer from heat soak, which a poor induction kit can.





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## Induction Kits and Intake Systems

This is the next step up from a panel filter and these kits come in a wide range of designs. The common element is that they all completely replace the entire airbox and often the intake too but leave the standard air collector in place. Instead, a replacement filter is attached directly to the flexi-pipe housing the MAF sensor. There are slightly different designs of filter, but they are essentially all cone shaped items that offer a 360 degree, three dimensional ability to draw in air through a larger surface area. These filter kits will produce a noticeable increase in sound, power and performance; but only when they work properly.

The main problem with a conventional cone filter is that it draws in air from all around it, and that's not necessarily a good thing as warm air does more harm than good. That is why simply removing the airbox and attaching a cone filter will not release more power. Instead, to combat heat soak, virtually all induction kits for the E46 M3 are more advanced, featuring a cone filter that is enclosed within, or behind, a protective shielding. The primary aim of this is to ensure the air filter only receives fresh, cold air, avoiding heat soak issues. Some kits are more advanced than others, ranging from a plastic shield that uses the bonnet itself to create an enclosed space, to a simple cone filter housed inside a carbon fibre shroud. The very best kits feature replacement intake tubes, cold air feeds and specially designed housings to direct or funnel air a particular way to further increase power, response and sound. Performance notably improves and a remap will help get the best from it. Prices vary in range from £300-1000 depending on the complexity of the kit.



## Quick-fire Questions

### Can replacing the filter do any harm?

As long as the kit is installed properly and is of good quality then, no. However, whether power actually improves is another question entirely.

### Will I definitely see a gain?

Some kits have been known to reduce power so it's best to choose carefully by getting personal recommendations from owners and specialists.

### Should a remap be done before or after the filter?

Unless it's a custom remap then it won't make a huge difference. The majority of maps are generic, off the shelf files and a mild increase in airflow from an aftermarket filter won't affect them.

### Will fitting an aftermarket exhaust along with an air filter make a bigger difference?

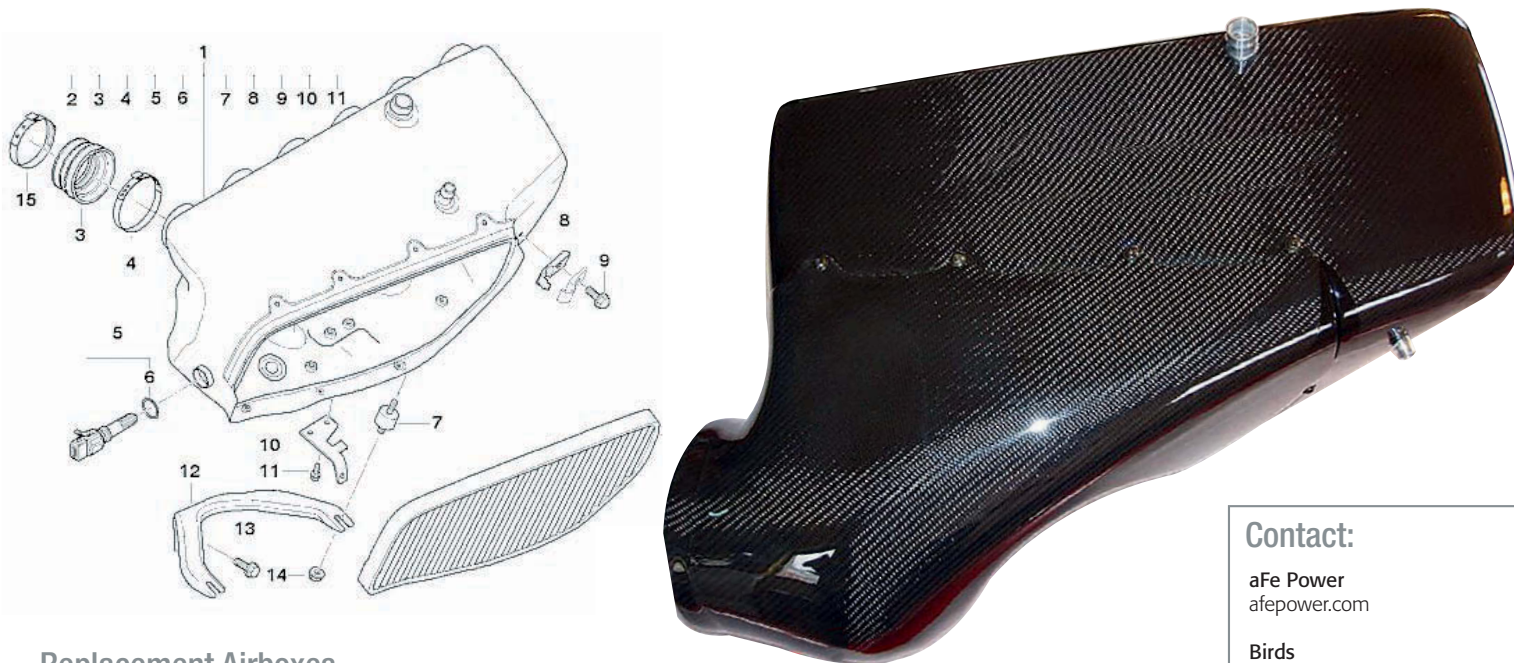
Modifications work better in unison with one another.

If you can get more air into the engine, then bigger benefits will be seen if you can get exhaust gases out faster at the same time.

### What if I want larger power gains?

A naturally aspirated car will never see huge gains from simple bolt-on parts such as air filters and induction kits, so if you want more then the next step is internal engine work or forced induction.



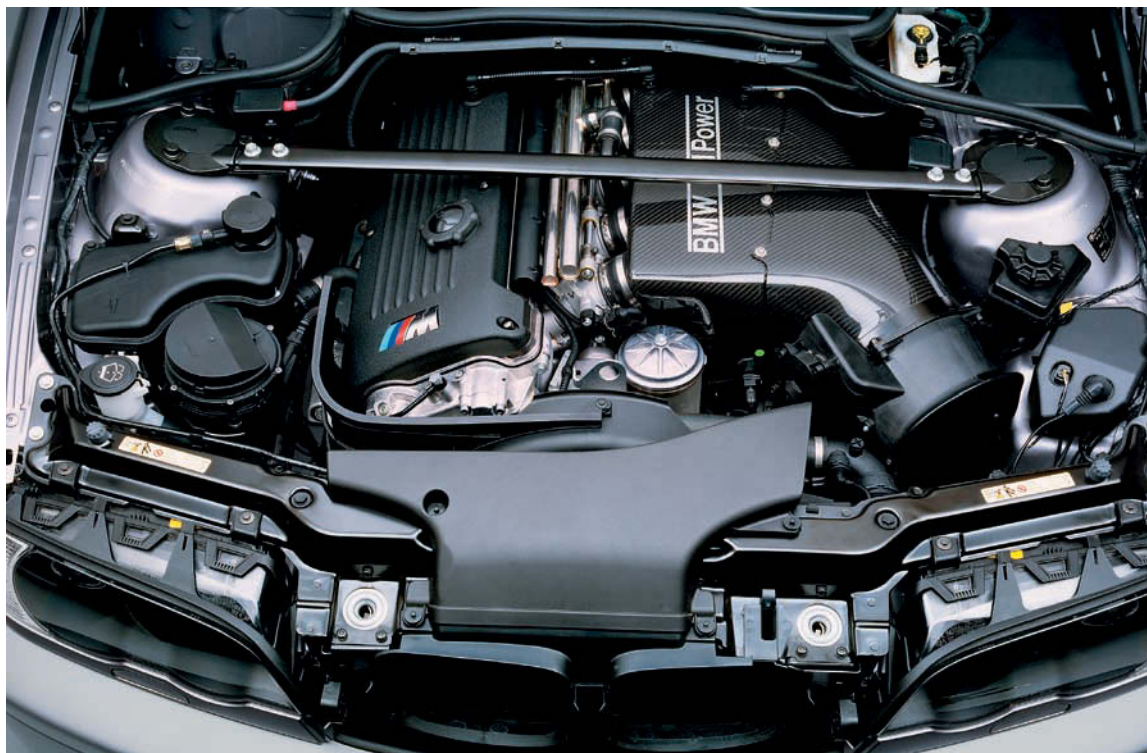


## Replacement Airboxes

The main trouble with the standard M3 air intake system is its complexity. By making the air pass up, down and sideways through the filter and various pipes and boxes it creates restrictions. This disrupts the speed of the air entering the engine and this is crucial, particularly to a naturally aspirated car. That is why the reworked M3 CSL used an altogether different and freer flowing intake system. If you've ever seen under the bonnet of the iconic CSL you will have noticed the large carbon fibre airbox, or collector, that dominates the entire right-hand side of the engine bay. It directly attaches to the throttle bodies, just like the original, and it's not only much bigger but it's carefully shaped to funnel air towards the connectors. There is still a paper element mounted inside, but there's no restrictive flexi-pipe or airbox to breathe through. Instead, the collector takes its air feed directly from a specially shaped intake fixed to the right-hand side of the car's front bumper. This

ensures fresh, unrestricted air is physically forced towards the air collector at speed. It also does away with the MAF sensor, as the CSL uses a different kind of ECU that doesn't require one.

As expected, these CSL airboxes noticeably improve power, performance, response and hugely alter the tone and sound of the induction. They are regarded as the best you can get, but a genuine BMW item costs around £5000 with all the associated fittings! Replicas have been made of the original design in either carbon, or cheaper fiberglass and prices start at around £1500 just for the collector. It's worth remembering that a normal M3 requires the MAF sensor to be relocated although a special remap to remove it can be performed. It also needs somewhere to actually take its air feed from. For these reasons, a well-made, complete aftermarket kit is nearer £3500. Due to the extra air the engine ingests, an remap is also strongly recommended.



## Contact:

**aFe Power**  
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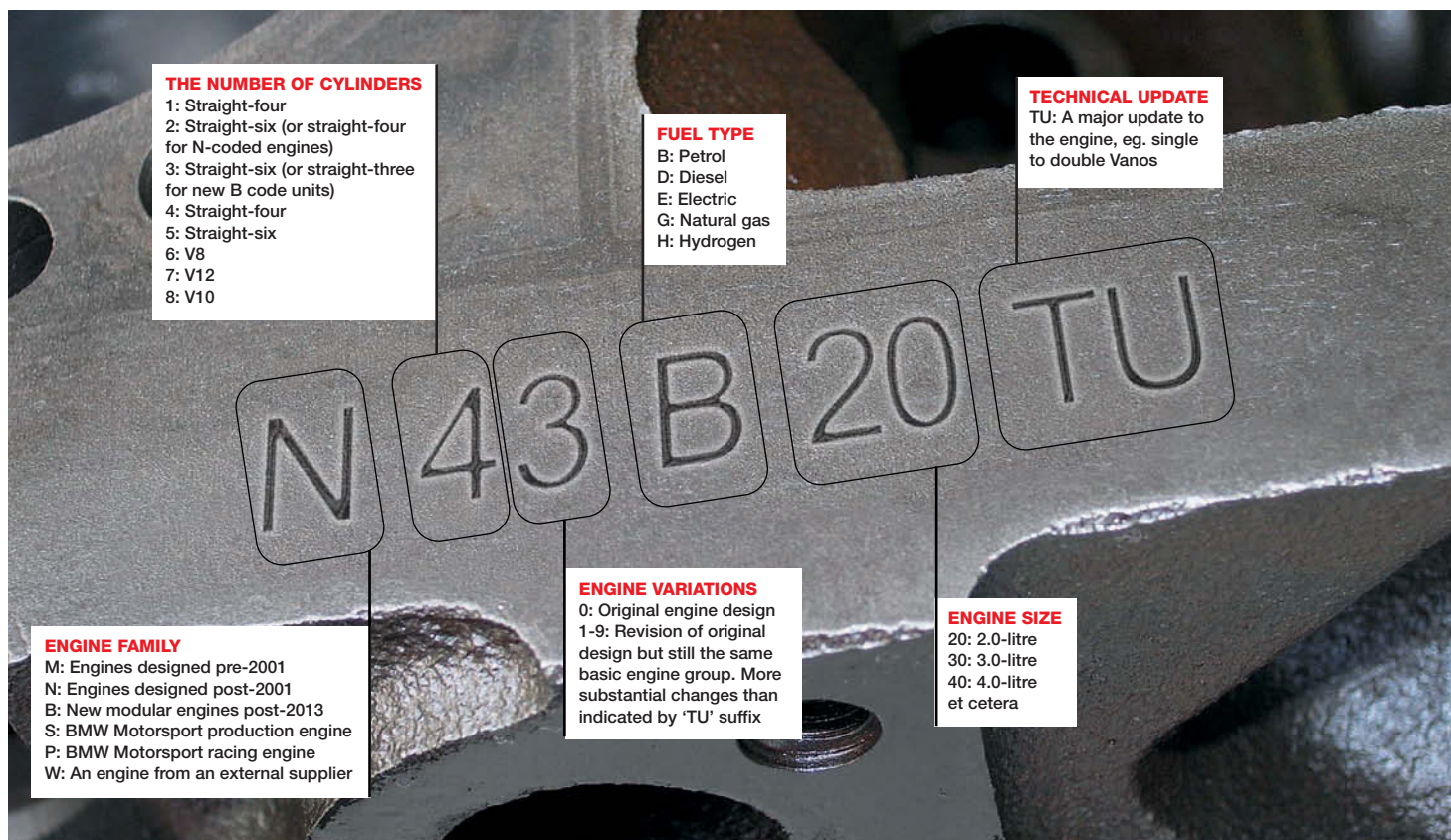
# Tech Focus: BMW Four Cylinder Petrol Engines

Last month we had a look at BMW model codes; this month we're going to do a similar thing but with BMW engines

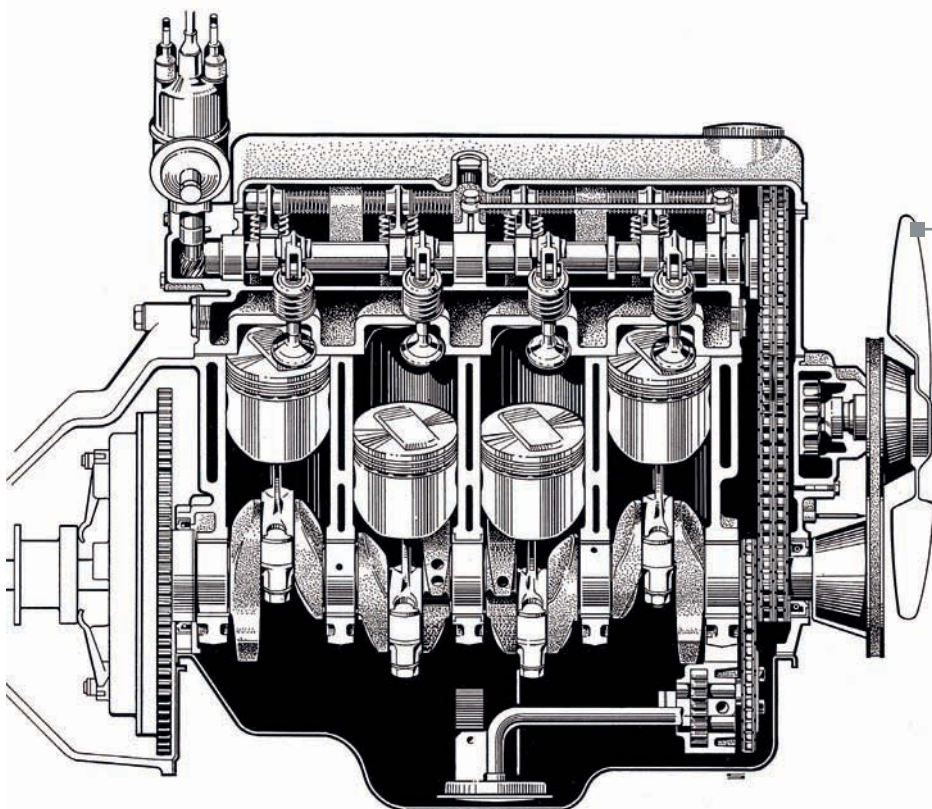
Words: Bob Harper Photography: BMW

There have been a plethora of BMW production powerplants over the years and we simply don't have room to cover them all here so we're going to kick off with the four-cylinder petrol engines, starting with the great grandfather of the modern BMW four-pot: the M10.

Before we get into a rundown of which engine's which it's probably best if we have a quick look at how you'd decode a BMW engine number such as N43B20TU. At first glance it might seem like double dutch but take a closer look and you can see that there's method to BMW's apparent madness as we can see in the example below...

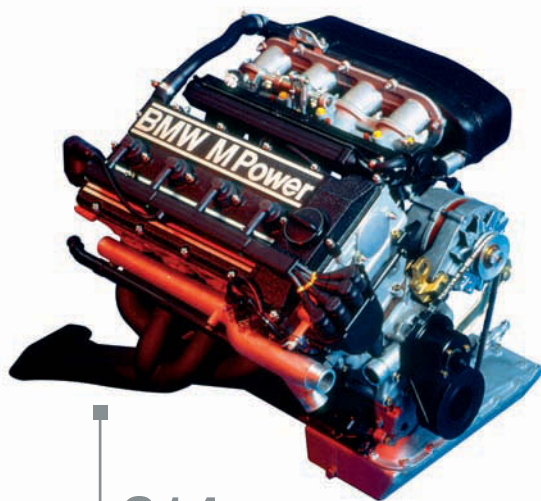






## M10

This unit started life in 1962 and went on to provide the basis for BMW four-cylinder engines for the best part of three decades. It was used in the '02, 2000CS, E21, E30, E12 and E28 before being finally phased out in the late 1980s. It came in a variety of capacities ranging from 1.5-, 1.6-, 1.8- to 2.0-litres. It was the basis for both BMW's legendary four-cylinder turbo versions, the one in the 2002 Turbo and the one that won the Formula One driver's championship for Nelson Piquet.

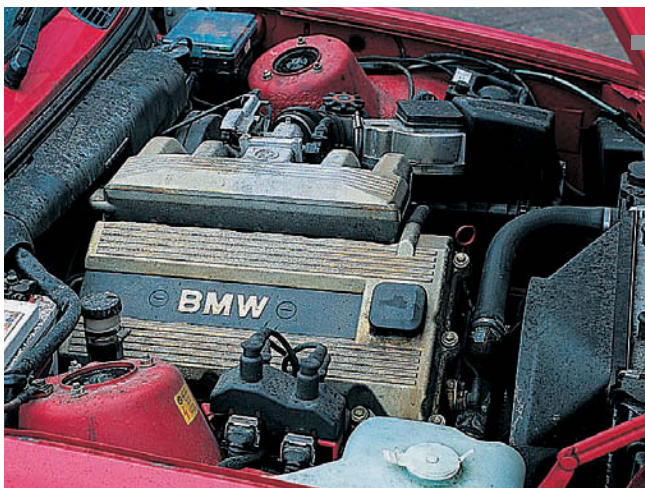


## S14

The iconic engine from the E30 M3 was BMW's first multi-valve four-cylinder unit and was a double overhead cam design. Available in three different capacities, 2.0-, 2.3- and 2.5-litres, it made its debut in 1986 and bowed out when E30 M3 Convertible production ended in 1991.

## M40

The M40 took over from the M10 in 1987 as BMW's sub-2.0-litre four-cylinder unit. Unlike the M10 which used a cam chain, the M40 switched to a cambelt like the small six-cylinder engine. It was available in just two capacities, 1.6- and 1.8-litres, and saw service in the E30 and E36 3 Series as the 316i and 318i while the larger of the two units was also found in the E34 518i.



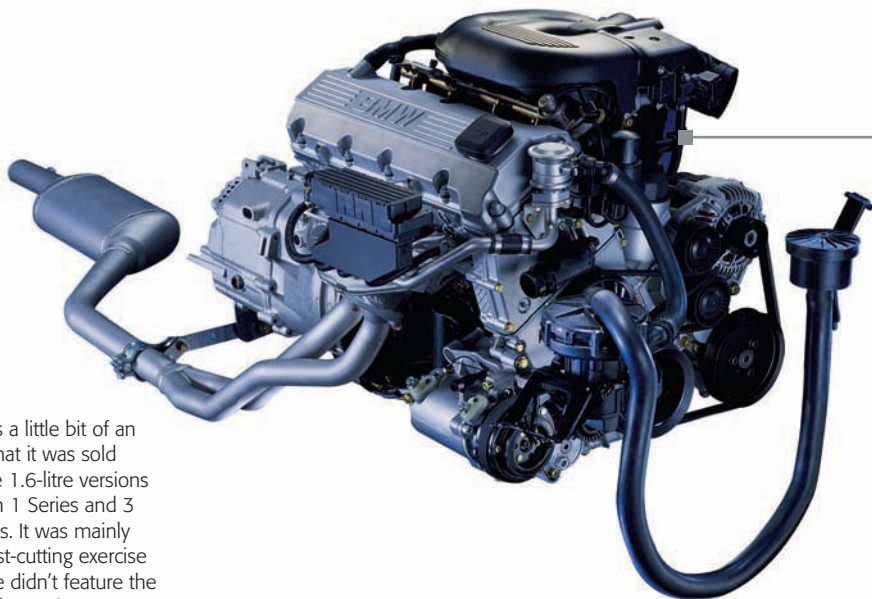
## M42

This was the high performance version of the M40 engine with a timing chain instead of a belt and a 16-valve DOHC head. It developed considerably more power than the M40 and was used in the E30 318iS and was also carried over into the E36 318iS prior to being replaced in the E36 by the revised M44. The M42 also spawned a BMW Motorsport unit, the S42, that powered the E36 STW machinery.



## N45

The N45 was a little bit of an anomaly in that it was sold alongside the 1.6-litre versions of the N43 in 1 Series and 3 Series models. It was mainly used as a cost-cutting exercise as the engine didn't feature the expensive Valvetronic system. In 2.0-litre form the N45 was used for the homologation special, the 320si, which was built without Valvetronic as the variable valve lift system wasn't suitable for a high-revving racing engine.



## M43

The M43 took over from the M40 in 1993 and while it was still a single overhead cam unit with eight valves, BMW once again returned to a timing chain rather than the cambelt of the M40 which was prone to snapping if it wasn't replaced in a timely fashion. Available initially as a 1.6- and 1.8-litre, the latter was upgraded to a 1.9 in 1998 as a measure to improve torque. The M43 was fitted to the E36 (316i, 318i), the E46 (316i, 318i/Ci), the E34 518i and the Z3, too.

## M44

Numerically and chronologically this was the last of the M-prefix four-cylinder engines and was a replacement for the M42. Its capacity was upped to 1.9-litres in the quest for slightly more power, torque and improved drivability. The engine featured in the E36 318iS, the 318ti Compact, and the Z3.



## N42

In BMW terms the N42 was a fairly short-lived unit that was soon superseded. It took over from the M43 and was fitted to the face-lifted E46 models and was available as either a 1.8- or 2.0-litre unit. Compared to the M43 it featured a DOHC layout and incorporated Valvetronic variable valve lift.



## N43

The N43, N45 and N46 engines are all closely related and often ran concurrently to each other depending on markets and applications. The N43 replaced the N42 and featured direct injection and Valvetronic and was available as either a 1.6- or 2.0-litre unit and was used in the E8x generation of 1 Series and the E9x 3 Series models.



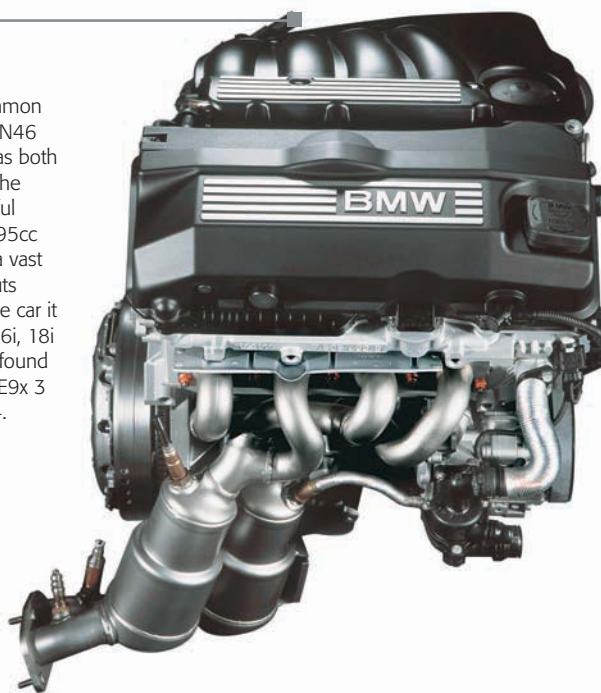
## B48

The next generation of BMW engine based on its modular system where each B-class unit will have a cylinder capacity of 500cc. We already have a three-cylinder B engine; this four-cylinder version will be first used in the 225i Active Tourer and the six-cylinder units have yet to come online.



## N46

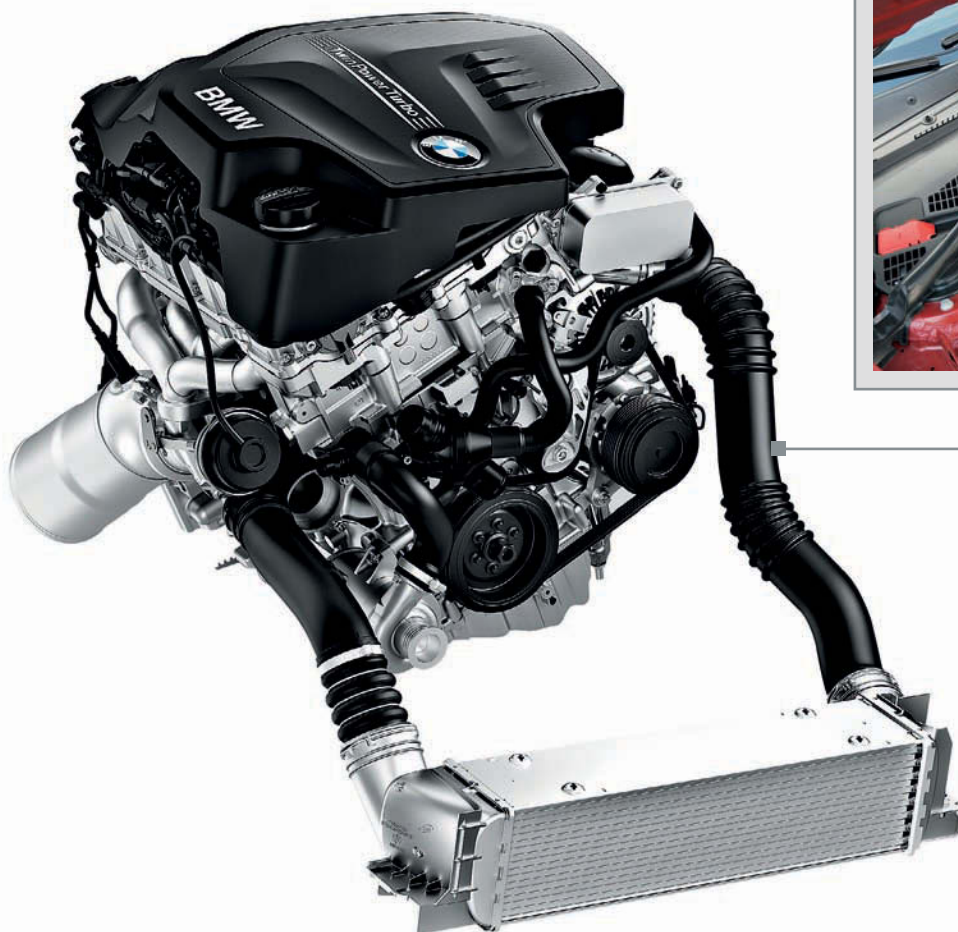
The N46 is the most common version of the N43/N45/N46 trilogy and was available as both a 1.8- and 2.0-litre unit. The latter was far more plentiful than the 1.8, with the 1995cc unit being available with a vast number of differing outputs depending on whether the car it was destined for bore a 16i, 18i or 20i badge. It could be found in the E46, E8x 1 Series, E9x 3 Series, the X3, and the Z4.



## N13

This engine is a little bit of an anomaly as not only was it developed in co-operation with PSA Peugeot Citroën it was originally designed as a MINI

powerplant that was changed from its transverse front-wheel drive setup in the MINI to be suitable for a longitudinal setup in the 1 Series.



## N20

Despite being a four-cylinder unit the N20 was actually designed as a successor to BMW's mid-range six-cylinder engine and as the N20 features a twin-scroll turbo, direct injection, Vanos and Valvetronic it can develop a decent level of power. Outputs vary according to the market and application, with the detuned 18i offering 156hp, the 20i 184, the 25i 218, and the range-topping 28i 245hp.







# F25 X3

**The current X3 has been with us for nearly five years now  
and that makes them ideal secondhand buys if you're  
looking for a package no other BMW can offer...**

**Words: Simon Holmes Photography: BMW**

Understandably for an all-new platform the first generation X3 was met with some scepticism upon its release back in 2003. But the model proved the doubters wrong and went on to sell over 600,000 examples worldwide and over 32,000 in the UK during its successful six-year life span.

Keen to pick up where it left off BMW launched the second generation F25 X3 in the UK in late 2010. This time round the X3 gained a sophisticated redesign that replaced the previous model's narrow and disjointed looks with stylish new lines and a more muscular profile. It looked and felt more upmarket, too, much like a baby F15 X5, only it arrived a few years before its big brother did. The front end styling undoubtedly received the biggest improvement as the previous mismatched bonnet line was now given a sharper and more modern look. Much larger kidney grilles added to the aggressive, contoured bumper, which now featured raised foglights set further apart to make the car look wider. A dominant swage line helped accentuate the larger rear arches and broke up the vast side panels. It wasn't quite as mean and meaty as an X5 but it was definite improvement over the previous generation.

Underneath the new bodywork the F25 shared its underpinnings with the 3 Series, much like the last X3. However, the F25 actually borrowed the F30 3 Series platform nearly a year before the saloon was released. It featured the much-improved double-wishbone front axle and five-link rear set-up for massively increased ride comfort deserved of a luxury X car.

The car was also taller, wider and longer with an extended wheelbase so there was more passenger space on the inside and boot space in the rear. It could take five people with ease and featured 550 litres of boot space, increasing to a vast 1600 litres when the rear seats were folded down.

The interior quality was a huge leap forwards for the platform. The previous model had never suitably excelled in this area but the F25 featured an interior finish and feel that seemed a step up even from the F30 3 Series it was based upon. In fact, thanks to the standard specification it was treading on the toes of 5 Series quality, it was that much nicer.

The standard-fit Nevada leather trim helped, as did the iDrive with its 6.5-inch colour screen. Other factory fit equipment for all F25s included 17-inch alloys, cruise control with brake function, front and rear

parking sensors and two-zone air-con. If that wasn't enough to keep you entertained there were also plenty of options to choose from including: Professional Navigation (that upgraded to an 8.8-inch high-resolution screen); Head-up display; Adaptive Headlights; a 360-degree reversing camera; and Variable Damper Control.

Whilst the new X3 was better in nearly every way there was one key area that was certainly more limited: the choice of engines. It became clear from early reports of the F25 that the UK would only receive diesel engines. It made sense, of course, based on the previous generation's sales. The smaller diesel engines had been by far the most popular choice, so much so that BMW predicted 80 per cent of F25 sales would be four-cylinder diesels. So on its release the new X3 was available in just one format: the xDrive20d SE. Thankfully, it was blessed with the more powerful version of the N47 engine that produced 184hp and 280lb ft of torque to match. Performance was more than ample with 62mph from rest arriving in 8.5 seconds and a top speed of 131mph. Although the engine had been around a while and was a little unrefined it did produce a torque band that made the car feel very nippy on the road. Fuel economy was also decent, with an average figure of 50.4mpg and emissions were an impressive 149g/km, both figures around 15 per cent better than the equivalent previous model. A six-speed manual gearbox was standard but the latest generation of superb eight-speed automatic was a very popular option. Both performance and efficiency were virtually identical with either transmission.

The xDrive20d went on sale at £30,490, which happened to be £115 less than the outgoing model, despite the much-improved specification. An M Sport trim level soon followed that gained larger 18-inch alloys, an aero kit, sports seats, anthracite headlining and a multi-function steering wheel for another £2500 or so.

In 2011 the six-cylinder diesel engine was then added to the line-up. The N57 3.0-litre came in two guises and was offered with the eight-speed auto only. The first was the 258hp xDrive30d, with a torque figure of 413lb ft to match. Performance was hugely improved as 62mph came in 6.2 seconds and top speed was 130mph. It could still post a 47.1mpg average with 159g/km emissions to match.

The second six-cylinder was the range-topping

xDrive35d, producing 313hp and 464lb ft of torque. It ensured the X3 became a genuinely fast SAV with 62mph arriving in just 5.8 seconds before storming on to its 149mph top speed. Fuel consumption took a hit, averaging 46.3mpg but emissions were still a sensible 162g/km.

Further improvements were added to the X3 line-up as time went on. In early 2012 Drive Performance Control was added to all models allowing a choice of Eco Pro, Comfort and Sport driving modes to be selected. Later in the same year came another engine to the diesel line-up, this time a lower powered version of the N47 2.0-litre making 143hp. The new entry-level sDrive18d featured sDrive, rather than xDrive, which meant it powered just the rear wheels, rather than all four. A manual or automatic gearbox was available so was an SE or M Sport trim. The car reached 62mph in 9.9 seconds or 10.3 seconds when connected to the eight-speed automatic 'box and average fuel consumption figures were 55.4mpg with emissions of just 135g/km.

For the 2013 season DAB radio and Bluetooth became standard and late in 2014 there was an LCI update. This included a mild redesign that gave the X3 a fresher face. The kidney grilles now merged into the larger headlights to form a sleeker front end while the bumpers were reshaped and the side repeaters were moved to the wing mirrors. However, specification improvements were more impressive. Business sat nav, heated seats and an electric tailgate all became standard and very handy upgrades. A new trim level was also introduced in the xLine, which sat between the existing SE and M Sport options. This new luxury trim offered exclusive 18-inch wheels and leather interior together with alloy or copper trim finishing inside and out for an additional £1500 over an SE. It is available only on 20d and 30d models.

Importantly, the LCI also brought with it engine upgrades. The ageing N47 four-cylinder was replaced with the new and improved B47. It produced more power and more torque but was also more efficient. Power increased to 190hp and 295lb ft of torque for the 20d whilst the 18d was boosted to 150hp and 263lb ft of torque. Performance increased accordingly and on the road the engines offered a more refined feel. Power and torque didn't increase on the six-cylinder models but performance still improved as the 30d covered 62mph in 5.9 seconds and the 35d dropped down to a blistering 5.3 seconds.



## Buying one

Unsurprisingly, and as BMW predicted, the xDrive20d is by far the most popular model. It's more than likely you will want one too, which is handy as there are around five times as many cars to choose from on the secondhand market as six-cylinder models. The first things to consider are specification, trim and transmission. It will be down to personal preference but we would always recommend going for the automatic. It suits the car better, is a lot more common and the manual gearbox is known for being a little notchy in its engagement. If you're unsure which you would prefer then test-drive both. With trim levels, the SE massively outweighs the M Sport or later xLine in popularity, so if you're after either of the latter models be prepared to search for them. Also, keep a look out for the better options such as sat nav and remember later cars came with better standard equipment, so if your budget can stretch it's probably worth it. If you're looking at the six-pot cars then it's worth knowing there's not much difference in the running costs between a 30d and 35d, both of which cost £180 a year to tax, and the latter model came only in M Sport trim. In comparison, the xDrive20d costs £145 for a year's road tax, whilst the sDrive18d drops down to £130.

Prices start very low, if that's what you're after. The cheapest F25 X3s, which are early SE versions of the 20d, go for less than £13,000 with mileages approaching the 150,000 mark.

A better example from a dealer with a little less than 100,000 miles on the clock will set you back around the £15,000 mark and there are plenty of choices at that level. Approaching the £20,000 barrier you will find ages and mileages decrease accordingly. The rarer M Sport cars command more money and are usually kitted with more options. The cheapest M Sport xDrive20d cars start around the £21,000 mark for a 2011 car with 80,000 or so miles. The later sDrive18d version is also harder to find and due to their age start at the £23,000 mark for a good, low mileage car.

When it comes to the six-cylinder models prices start at £21,000 or so and we found a 2011 xDrive30d SE with 70,000 miles on the clock for a little less. However, budgeting £25,000 will give you a much larger range of cars to choose from. Again, M Sport versions will command more money but £27,000 will bag you a nice M Sport 30d with less than 50,000 miles on it. If you have your eye on a top-of-the-range 35d then there are few to choose from but they are rarer and you will need over £30,000 in your pocket to secure one. On the plus side, the 35d cars are usually always very well spec'd, well-looked-after and have covered low mileages.

If you want some added security when buying then a BMW Approved Used X3 starts at £19,000 for a 20d SE with less than 40,000 miles, and that will come with a warranty. A 30d starts at £24,000 and there are plenty around.



## Wheels, tyres and brakes

Be careful of any car that isn't wearing exactly the correct size of wheels and tyres. The wrong-sized winter tyres, aftermarket wheel packages or a set of wheels designed for another BMW model tend to upset the xDrive system and puts the car into limp mode, claiming a DSC and xDrive malfunction has taken place. This is not usually the case and can be easily cured simply by reverting back to the correct sizes. Other than that, inspect the wheels for signs of lacquer corrosion, including the centre badges.



## Bodywork

Aside from ensuring there aren't any obvious signs of crash damage (such as uneven panel gaps or mismatched colours) then there should only be a couple of smaller things to look out for. Check all of the badges and emblems on the car are in good condition, as the lacquer has been known to corrode prematurely. It's not a huge deal and it's easily rectified with replacements but it can let the

car down. Panoramic sunroofs were a fairly common option but they have been known to make an annoying creaking noise when on the move, particularly in cold weather. It's due to the plastics, so listen out on the test-drive and be prepared to fit some strategically placed Velcro if needs be as other owners have found this can solve the issue!





## Engine

None of the engines suffer from serious or common faults, although the N47 four-cylinder was known for timing chain failures early in its life. This appears to have been cured by the time the F25 arrived. Similarly, the six-cylinder units were proven to be reliable at this late stage in their lives.

However, smaller issues do arise and it's important to know that if they do, the car may, confusingly, give the impression it is drivetrain-related. Virtually any engine issue causes the 'Drivetrain Malfunction Error' message to appear on the iDrive screen. If this does come up just let a garage diagnose the

problem through the fault codes. Common causes for the message range from faulty fuel injectors to oxygen sensors and even Vanos problems, but most likely is a failing battery. If the battery is dying it will cause all kinds of issues and other error messages will appear, so don't necessarily fear the worst.







## Transmission and drivetrain

This section is closely related to the 'Engine' section, as the dreaded 'Drivetrain Malfunction Error' warning message will illuminate for virtually any problem on the car. It's rarely due to a genuine fault with the xDrive system itself, but the odd issue has been known. Again, get the fault codes checked out properly by a good garage to be sure. Also be aware that it could be related to incorrect wheels and tyres.

On another note, if the automatic gearbox does display some odd or jerky shifting patterns, particularly on low speed downshifts, it could be down to the throttle calibrations. Reset them by turning the ignition on, pressing the accelerator to the floor for ten seconds, then pressing the 'Start' button to turn off the power with your foot still fully down on the accelerator. You can then remove your foot, wait a few minutes and take the car for a drive. If the problem persists and gets worse then see a dealer as the torque converter or control unit could be at fault.







## Steering and suspension

There was an issue with steering racks completely failing for certain cars built between April 2011 and June 2011. It caused a recall in America, but it didn't warrant a one in the UK. It's most likely that any cars affected will have come to light by now but failures have still been known later on. You will know if it's failing as an error message will appear that will usually go if you turn the engine off.

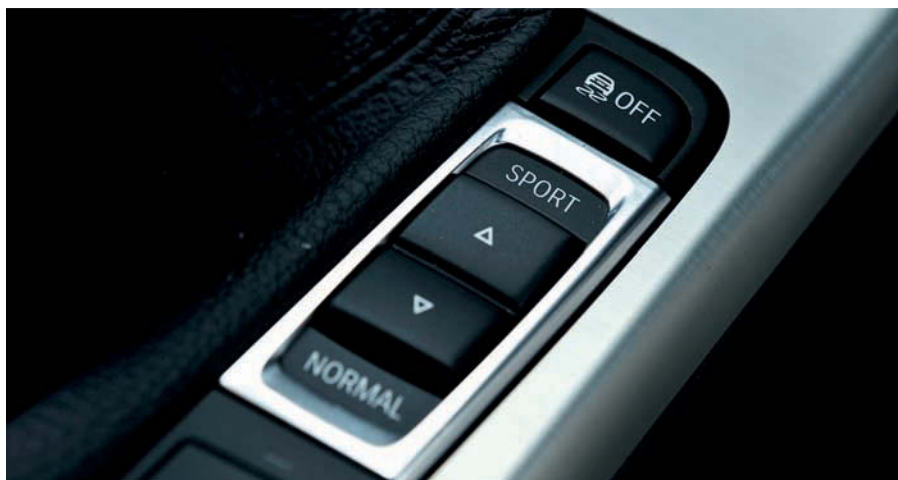
A low level clicking or clunking noise from the front end when steering at very low speeds or going over large bumps is an issue that has affected some cars. A new steering rack often seems to solve it as these were apparently redesigned during production. For a few troublesome cars the noise doesn't seem to go away, although it doesn't get any worse, so listen out on the test-drive.



## Interior

Build quality is generally pretty good but sadly, like the bodywork, it can be let down by the finish of the smaller items of trim. Some owners have reported peeling or flaking trim finishers, which again are easily replaced but annoying, so inspect them carefully. Other than that, iDrive related issues are something to check on a test-drive, ranging from a Bluetooth system that won't pair up with your phone to sat nav instructions going

haywire or a reversing camera that stops working. A vast majority of these issues can be cured with a good old software update but make sure you test as many functions as possible. A more serious issue is if the instrument clusters fail. It's an expensive fix when out-of-warranty so check everything looks to be working as it should. Last of all, check the boot area for signs of moisture as the weather seals have been known to leak.





## Verdict

The F25 is arguably one of BMW's finest cars of the moment. It offers a combination of looks, performance, practicality and specification that is hard to beat. Being a current model it also offers a slice of modern BMW motoring at a fraction of the cost. With sound examples going for less than £20,000 with all the equipment you could ever want, it's hard to ignore. Serious issues are virtually non-existent, although these are still relatively new cars so any issues that do have to be dealt with out-of-warranty are going to be expensive. For that reason, it's always better to choose a car with some kind of guarantee or consider adding a warranty policy just to be on the safe side. There's nothing else out there that can offer what the X3 can quite so well.



## F25 X3

sDrive18d	sDrive18d LCI	xDrive20d	xDrive20d LCI	xDrive30d	xDrive35d
<b>ENGINE:</b> Four-cylinder, turbocharged	<b>ENGINE:</b> Four-cylinder, turbocharged	<b>ENGINE:</b> Four-cylinder, turbocharged	<b>ENGINE:</b> Four-cylinder, turbocharged	<b>ENGINE:</b> Straight-six, turbocharged	<b>ENGINE:</b> Straight-six, twin-turbo
<b>CAPACITY:</b> 1995cc	<b>CAPACITY:</b> 1995cc	<b>CAPACITY:</b> 1995cc	<b>CAPACITY:</b> 1995cc	<b>CAPACITY:</b> 2993cc	<b>CAPACITY:</b> 2993cc
<b>MAX POWER:</b> 143hp	<b>MAX POWER:</b> 150hp	<b>MAX POWER:</b> 184hp	<b>MAX POWER:</b> 190hp	<b>MAX POWER:</b> 258hp	<b>MAX POWER:</b> 313hp
<b>MAX TORQUE:</b> 233lb ft	<b>MAX TORQUE:</b> 265lb ft	<b>MAX TORQUE:</b> 280lb ft	<b>MAX TORQUE:</b> 295lb ft	<b>MAX TORQUE:</b> 413lb ft	<b>MAX TORQUE:</b> 464lb ft
<b>0-62MPH:</b> 9.9 seconds (10.3)	<b>0-62MPH:</b> 9.5 seconds (9.8)	<b>0-62MPH:</b> 8.5 seconds	<b>0-62MPH:</b> 8.1 seconds	<b>0-62MPH:</b> 6.2 seconds (5.9)	<b>0-62MPH:</b> 5.9 seconds (5.3)
<b>TOP SPEED:</b> 121mph (121)	<b>TOP SPEED:</b> 121MPH	<b>TOP SPEED:</b> 144mph (140)	<b>TOP SPEED:</b> 131mph	<b>TOP SPEED:</b> 130mph (144)	<b>TOP SPEED:</b> 149mph (152)
<b>ECONOMY:</b> 55.4mpg (52.3)	<b>ECONOMY:</b> 56.5mpg (55.4)	<b>ECONOMY:</b> 50.4mpg	<b>ECONOMY:</b> 52.3mpg (54.3)	<b>ECONOMY:</b> 47.1mpg (47.9)	<b>ECONOMY:</b> 46.3mpg (47.1)
<b>EMISSIONS:</b> 135g/km (142)	<b>EMISSIONS:</b> 131g/km (133)	<b>EMISSIONS:</b> 149g/km (147)	<b>EMISSIONS:</b> 143g/km (138)	<b>EMISSIONS:</b> 159g/km (156)	<b>EMISSIONS:</b> 162g/km (157)
<b>PRICE NEW:</b> £28,580	<b>PRICE NEW:</b> £30,995	<b>PRICE NEW:</b> £30,490	<b>PRICE NEW:</b> £27,935	<b>PRICE NEW:</b> £37,600	<b>PRICE NEW:</b> £40,205
<i>Figures in brackets for automatic</i>	<i>Figures in brackets for automatic</i>	<i>Figures in brackets for automatic</i>	<i>Figures in brackets for automatic</i>	<i>Figures in brackets for LCI</i>	<i>Figures in brackets for LCI</i>



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# LONGTERMERS

The 135i receives some more shiny bits in the quest for more horsepower, the Alpina has a serious dose of TLC and there's a new track car in the building, too

## E82135i

Well, my luck with the car finally came to an end. With the intercooler fitted last month it instantly felt more responsive and, keen to see just how much difference it had made, I then went off into the sunset for a spirited drive. Then came the first sign of problems as the clutch started to slip. At first, only in sixth gear in the higher boost setting, but over the space of a week it began slipping in fourth gear on low boost as it got much worse.

So, the search began for a replacement clutch and although the standard item had done pretty well so far, I decided to take the opportunity to uprate it. However, this would pose a problem as, from experience, uprated clutches rarely give a standard pedal feel or engagement. Whilst this would be fine for most cars I was

more concerned as this is my daily driver, in which I cover over 1000 miles a month.

My first port of call was to look at the options available. Several US-based companies offered suitable packages but immediately I was drawn to a name I knew well: Clutchmasters. I had used the company before for a previous project car and was impressed with the fitment and feel. Because of this I ventured onto its website ([www.clutchmasters.com](http://www.clutchmasters.com)) and after viewing the 14 options the company offered for my car and becoming ever so slightly overwhelmed by the choice, I promptly sent the company an email asking for some advice! I soon got a friendly reply asking what the car would be used for, the expected

power level and what kind of pedal feel I wanted. After explaining my requirements I was advised to choose the FX350 kit.

Rated to nearly 600lb ft of torque, this kit featured a heavy-duty pressure plate that was suitable for a dual-mass flywheel. As it's not a full paddle clutch (these are offered), the pedal feel should be similar to standard. I did consider going for a single-mass flywheel conversion but decided against it as I'm told they are a little noisier, which is not ideal for a daily driver. At a touch over £600 for the clutch, the price is competitive, too, considering the other options on the market and I know I'm getting something that works well. Postage was only £60 and the dreaded import tax worked out at another £168, but

the one saving grace is that fitting will be cheap.

After placing my order the kit arrived quickly, but due to deadlines I've only just had time to open the box and have a sneak peak. It looks well made and seems to come with everything needed, but I'll inspect the kit properly and take some pictures before it gets fitted. The car is now booked in for fitting in two weeks time, so I've also ordered a new dual-mass flywheel to go with the clutch. After looking around, Euro Car Parts turned out to be cheapest for a genuine LUK replacement, but it had to be specially ordered.

In other news, the packages I ordered from VRSF arrived this month, which meant I could finally inspect them properly. It's always a little nerve-



New clutch has only just arrived but looks like a real quality piece of kit



**CONTACTS:**  
[www.clutchmasters.com](http://www.clutchmasters.com)  
[www.vr-speed.com](http://www.vr-speed.com)



wracking ordering bits from a website as, despite the pictures, it's hard to gauge the quality until you see them first-hand. But I needn't have worried. When they arrived it was immediately clear that the quality was excellent. The downpipes are designed to fit straight onto each of the turbos and then meet the original exhaust system to allow a freer-flow with less restriction. These should notably increase power but, perhaps more importantly, throttle response should also improve. Constructed from stainless steel, the pipes are three-inches in diameter and feature lambda sensor bosses so the four original sensors can be refitted. By appearance alone, the pipes certainly seem well made. Their design and construction is impressive, the welds are neat and

consistent throughout and the general feel and finish is superb. They are also supplied with replacement gaskets and new bolts as part of the package.

The chargepipe, which connects the intercooler to the throttle body is made from alloy, so it's light but stronger than the original plastic version that can fail with increased boost pressures. It features a beautiful billet machined throttle body coupling and the correct double-take offs for the uprated Forge diverter valves, which will all be fitted together next month. There are other options available to suit single aftermarket blow-off valves, too. Again, the feel and finish is excellent and the crackle black powdercoating suits the subtle style of the engine bay. It comes with a silicone coupler and all fixtures and

fittings required. There's also a boss welded in place for meth injection, which is a way of increasing power further, if I ever fancied going that way in the future! As well as being stronger, the pipe is also said to further improve initial throttle response and it comes with a lifetime warranty.

Considering VRSF's competitive pricing structure makes it one of the cheapest options on the market, I have to say the parts certainly look the part. The downpipes worked out at £368 and the chargepipe was £225, both delivered. The proof will be when they are fitted, which will be next month as my mechanic has suggested doing the downpipes at the same time as the clutch. Considering these are supposed to be quite a tricky job, he must be gluten for punishment!

So next month, the car should be back to good health with a clutch that doesn't slip anymore and the last couple of bits needed before the car can go on the dyno for a power run.

*Simon Holmes*



**E82 135i**

**YEAR: 2007**

**MILEAGE THIS MONTH: 1222**

**TOTAL MILEAGE: 74,442**

**MPG THIS MONTH: 29.1**

**COST THIS MONTH: £1270**  
(clutch £830, flywheel £440)



The VRSF downpipes and chargepipe are very nicely made and come in at a bargain price





## Alpina B9

I've made a few attempts at writing the 'hit list' I promised you in last month's introduction to the B9, but each time I review it the list looks unfair and makes the car sound like a ground-up restoration project. Whilst there is certainly work that needs to be done, it's far from that.

I promised you a list, though, so here it is: the OSR arch and bootlid need some attention (rust); the boot slam panel lets water in; the boot floor needs treating for surface rust; the NSR quarter has a crease in it; the NSF wing has a curious scratch/mark; the front cow catcher spoiler has various nibbles and bites taken out of it; the rear rubber spoiler is sort of peeling and there are a few isolated areas of rust bubbling to deal with; the driver's seat has a cigarette burn in it; the gear-lever gaiter is shot to pieces; the interior looks like a dog has slept in it; the ashtray is broken; the engine bay needs a thorough deep clean; the rain gutters are absolutely filthy; the wheels need refurbishing; and the car has the oh-so-common classic BMW trait that is the 50mph wheel wobble.

Clearly some of the list can be tackled by the enthusiastic DIY owner and I am more than happy to roll my sleeves up and get my hands dirty. Some of the other items, though, will require specialist knowledge and skills

that I don't possess.

The DIY list, though, requires space to work on and around the car, so I'll say this quickly. I've sold the 6 Series. There, I said it! It was a sad moment but the reality is between the Alpina, the 6 Series, a big motorbike, three cycles and all the other usual garage detritus there was hardly an inch to spare. As you can see I'm totally committed to refurbishing the B9.

So, moving on, as you can see from the garage picture I now have the space to tackle some of the DIY jobs. The gear lever gaiter was an easy one because it's literally a plug 'n' play part. Unfortunately I haven't managed to find a good enough secondhand OEM item yet so I purchased a leather example off a well-known internet auction site for £7. It has a different surface texture to the BMW item (the BMW item isn't actually leather) but it certainly lifts the interior. Whilst I was dealing with the gaiter it made sense to clean the gear knob itself. Not to put too fine a point on it, it needed a good clean. As you can see from the pictures it turned a matt finish after the clean but several coats of linseed oil later and it looks great again.

Next up was a clean of the main interior compartment. My better half refused to sit in the car until it passed her cleanliness test which resulted in







her setting upon the car like a woman possessed. A few hours later and I hardly recognised it. If only she had similar OCD tendencies towards paintwork cleanliness I would never have to wax the car again!

The more technical element of tackling the infamous 50mph wheel wobble fell to Steve, the former owner. Steve knows the car inside out and is an extremely handy chap. It turned out that a couple of the control arms and brake reaction bushes were past their best. It made sense to replace them all at the same time with quality items as I think budget parts are a false economy in these instances. That did mean that the parts came to more than I was expecting (around £400) but the equivalent BMW price was nearly £1000 so I should be thankful for small mercies.

Two hours later and they were fitted and the wheel wobble had disappeared. When Steve isn't playing drums for his band (facebook.com/Skuaband or @Skuaband on Twitter) he's setting up his new business (specialising in BMWs) so give him a shout on autoslave@hotmail.co.uk if you have a car that needs a cost effective repair doing.

The last job this month has been to sort out the numberplate. The previous owner had the car registered from new as RIJ 5351 (aka 535i). Whilst it's a great looking plate I wanted the B9 to proudly display an age-related Y-suffix plate, so I wrote to

the DVLA to see what could be done. You can only imagine the smile on my face when the paperwork came back confirming the car was now re-registered as HEX 991Y. I couldn't buy the new numberplates fast enough. The car now wears its age with pride.

It does mean I now have the car's original numberplate on retention so if you have a BMW 535i and fancy treating it to a new plate please get in touch, as it would be great to see it continue on a reader's car.

Fitting the new plates unearthed some caked-on dirt beneath the old plates (see pic). It took over 30 minutes of graft to get it shifted but I just couldn't put the new plates on until I knew the paintwork was clean.

Next month the under bonnet areas will get a similarly good going over and I will see if I can find a wheel refurbisher I trust.

*Elliott Stiling*



**E28 Alpina B9**  
**YEAR:** 1983  
**MILEAGE THIS MONTH:** 402  
**TOTAL MILEAGE:** 137,197  
**MPG THIS MONTH:** Still no idea!  
**COST THIS MONTH:** £476  
 (suspension arms and labour), £7  
 (leather gaiter), £34 (numberplates)



## F10 M5


After last month's fun, a more normal time was had by the M5 this month. The car has been back to BMW Swindon to have the gearbox weep fixed and the summer tyres put back on. The oil leak from the gearbox was traced to the main seals. These have been replaced under warranty. The work was completed on time during a day trip and I was supplied with a courtesy car. The X1 auto is not my cup of tea but transported me around adequately for a day. Typically the day after I had the summer tyres put back on, my morning commute was on sub-zero frost-covered roads. While the summer tyres are quite a bit more slippery in low temperatures, they quickly provide more grip than the winters once up to a reasonable temperature. The first few miles on a cold day can be quite interesting though. Although the traction control remains firmly on, quite a bit of sideways action was seen. Maybe the traction control needs a bit of time to recalibrate to the summer tyres, like the driver.

Following on from the software update last month, there have not been anymore gremlins in the audio department. I am hopeful that this fix will be permanent. On a more irritating note, I noticed a couple of scratches in the middle of the rear bumper. I think I have been the victim of a car park bashing. The size and shape of the scratch looks like a wheelie bag has scraped past it. I also noticed that the shut line on the

bonnet looks a little more open than before. At first I wondered if I hadn't shut the bonnet properly but investigation shows that it is closed and securely latched. I have looked around the bumper and can't find any signs that it has been hit but it definitely looks different. Further investigation will be carried out.

At the end of the month, the TPMS popped up to say I had a right rear puncture. The display clearly showed the pressure was down by around 0.5bar since the night before. As I had just left home, I returned and removed the wheel to investigate. I checked all over the tyre but could find nothing more troubling than a few small pieces of flint. I was expecting a nail, or some other detritus that could cause a slow puncture, but nothing. I reinflated the tyre and, to date, all looks to be fine. Phew! After last month's wallet-bashing, replacing a nearly new rear tyre was not what I needed.

*David Ingram-Hill*



**F10 M5**  
**YEAR:** 2012  
**MILEAGE THIS MONTH:** 1177  
**TOTAL MILEAGE:** 44,928  
**MPG THIS MONTH:** 21.7  
**COST THIS MONTH:** Nil







## E84 X1 sDrive20d

First, I must apologise for the lack of X1 content over the last couple of issues but I just don't seem to have had the time to put pen to paper, and on the rare occasion that I've actually thought about what to write I've realised that I really haven't had anything to say!

The X1 continues to provide solid service and it's been pounding the highways and byways in its dependable way. It did have a quick excursion into Cooper Sevenoaks for an MoT and a brake fluid change but other than that it's been a paragon of reliability. Touch wood.

Like David Ingram-Hill and Mark Williams, I too have been contacted by BMW Assured Warranties recently to see if I wanted to extend the warranty now that I've owned the car for a year,

since I purchased it from Specialist Cars in Tring. I wasn't sure whether to go for it or not but given that Matt Richardson's 520d Touring lunched its turbo and that, going back a few years, Dom Holtam's X3 did the same thing I decided I'd go for the peace of mind that renewing the warranty would bring. Even on my MINI Clubman the cost of extended warranty repairs was always more than the cost of the warranty so it does seem to make financial sense. Cue, 'they don't make 'em like they used to' comments.

I've opted for Comprehensive cover with no excess and BMW Emergency Service cover, too, which comes to £47 a month – certainly far less than a new turbo would be!

I have also seen the inside of another BMW this month, although I'd

prefer not to have become acquainted with the rear seat accommodation offered by an F10 5 Series on the hard shoulder of the M4. Yes, I'm afraid I got a little carried away when running late to see a client but fortunately it was only a fixed penalty as I think the officers could see I wasn't driving in a dangerous manner, just a smidgen (okay, it was more than a smidgen) over the speed limit. Must concentrate on the speedo a little more in the future.

Lastly, I managed to persuade my youngest and oldest children to give the X1 a bit of a spruce up as it was looking rather dirty after a few weeks without a wash. I generally run it down the road to our local hand car wash place but thought I might as well give the money to family and I must say

they have done a pretty decent job. They even used two buckets which I believe is what you're meant to do in these situations according to the boss... God knows why, but it kept him happy!

*Patty Harper*



### E84 X1 sDrive20d

**YEAR:** 2011

**MILEAGE THIS MONTH:** 3796

**TOTAL MILEAGE:** 40,855

**MPG THIS MONTH:** 38.6

**COST THIS MONTH:** £200  
(MoT, brake fluid, speeding fine)

## F20 118d Sport

I'm sorry to report that I haven't done anything interesting with the 1 Series this month. I've driven it around and, well, that's pretty much it I'm afraid. I haven't even got round to fixing the rear wiper.

I had contemplated swapping over to summer wheels but it's been pretty flipping cold recently so I'm glad I didn't. I have started to wonder if perhaps an all-season tyre might be something worth trying – I don't mind swapping my wheels over twice a year, but to have two sets of wheels isn't a practical option for many people and then there's the additional cost of having to buy another set of tyres. Michelin recently announced its new CrossClimate tyre, which sounds seriously impressive and it sounds like

it's a real step forward from previous all-season tyres and works really well in all conditions without really having to offer any compromises. I call it witchcraft but it really does sound like one (rubber) ring to rule them all.

*Elizabeth de Latour*



### F20 118d Sport

**YEAR:** 2013

**MILEAGE THIS MONTH:** 842

**TOTAL MILEAGE:** 14,704

**MPG THIS MONTH:** 49

**COST THIS MONTH:** Nil





## F30 320d Sport

Another 'Service' visit is soon needed for KP12 in order to replace the brake fluid and also to take up North Oxford's offer of a free pre-warranty expiration check before the standard three-year coverage expires towards the end of April. Anything which is, or can be, warranty-related will be rectified, so it makes sense to get it in and checked over. They'll do the MoT, too, which I'd totally forgotten about. And I've had a letter through the post from BMW with regards to extended warranty options. We're planning on keeping the car for another 12 months or so, so will probably take up the offer of £470 a year (with a £100 excess) for Comprehensive coverage which also includes Emergency Service (which is basically breakdown cover, recovery to the nearest dealer and a hire car should it be needed). It's possible to get the premium down to £380 per year with a £250 excess, but we'll opt for the former. It's even possible to get the cost down to just over £300 if you forego Emergency Service but then one would have to ask the question as to why bother in

the first place. Interestingly, the price shown on the letter for a (one assumes typical?) 50k-mile Three Series is the same price I've been quoted for my 39k example...

In terms of warranty coverage with the Comprehensive option, the only notable exceptions in the policy handbook are: clutch facings and auxiliary drive belts, as I suppose there's a chance that KP12 may need a new clutch in the next 15k miles or so; door handles (as the door handles on previous older BMWs have come off in my hand on occasion); and coolant hoses, the latter of which we all know are a notorious BMW weak spot. Otherwise, and apart from the battery and brakes, lights, exhaust etc (usual consumables), any mechanical or electrical part fitted at the factory is covered. There are further wear-and-tear exceptions to this, of course, as is normal but the warranty handbook doesn't go into specifics so one expects a discussion would take place with the dealer in the event of a claim on the water pump, for example, because there's no way I'd agree to

pay for a replacement on a near four-year-old car should it go pop next year. So I'll get that all that organised over the next few weeks.

I actually washed and polished the car myself this month, too, the latter due to the realisation that the paint was looking a little flat. Once complete, I was again reminded of the vibrancy of Melbourne red, which is best in strong sunlight, taking on an orange tint from some angles. Combined with the 19s and privacy glass in the rear windows, plus the xenons which add dynamism to the front, it really sets the car off a treat. It's true what you hear said about freshly cleaned and polished cars; they feel 'new' and you start to appreciate them in a different light, glancing back when you park it or taking one last look through the curtains as dusk descends of an evening. I even had a few appreciative looks from people in local car parks. Although I'll still sell it next year mind...

An absence of longer distance trips this month and reduced mileage due to being out of action for two weeks

after a minor hospital operation (in and out in a day but, good grief, the tedium of having to lay on the couch for over ten days nearly drove me to distraction) has done nothing for the economy and I think just over 43mpg is the worst I've ever recorded with this car. It's still pretty good but unless it's markedly improved next month I'll have to start asking some questions at the dealer and putting that extended warranty to the test.

Mark Williams



### F30 320d Sport

YEAR: 2012

MILEAGE THIS MONTH: 572

TOTAL MILEAGE: 39,071

MPG THIS MONTH: 43.2

COST THIS MONTH: £340

(tyres – which was actually a forgotten cost for last month)







## E24 M635CSi

After the short month of February where the Six really didn't get much exercise I was determined to give it a good run this month to blow the cobwebs away and to keep everything running smoothly. A photoshoot up near Warwick seemed to be the perfect opportunity to stretch its legs and even if it wasn't the perfect photographic support car, I couldn't see any reason why it couldn't cope with the journey. Plus there was the opportunity to get some *Longtermers* shots in the bag... they're always so much better when taken by a proper photographer after all!

The M88 'six was a little slow to turn over on the morning of the shoot but it did fire-up and ran cleanly after a couple of blips on the throttle (that I'm sure my neighbours appreciated, so much better than a traditional alarm clock) and I pootled off in the direction of Wandsworth to pick up snapper Smithy. It was a pleasant surprise when

all his kit fitted into the boot without too much head scratching, but not as pleasant as the lycra-clad cycle courier in Brixton shouting "nice Six" as he hurtled past when I was stuck in traffic.

The run up the motorway was fairly undemanding, the M6 settling into a gentle lope and remarkably returning almost 30mpg according to the OBC, which was far more palatable than the 12mpg it was suggesting around town. The only thing we did notice was that at 65mph we were getting a nice stream of warm air coming from the heater but as soon as you exceeded that speed the nice warm glow was replaced by an icy blast, and no amount of twiddling with the heater knob made any difference. I'll have this looked at when it goes into BM Sport for the fan blower motor but a quick trawl of the internet suggests it's a faulty heater valve.

Once off the motorway we found plenty of fast A- and B-roads for the Six

to blast around and, provided the surface was pretty smooth, it really is an entertaining companion. Less smooth Tarmac does tend to show up that its suspension design is pretty rudimentary but, all in all, I had an absolute blast punting it around for photography and even Smithy got into the groove reckoning it looked like I was really enjoying myself.

There was one other thing I noticed when we were doing some cornering photography and that was the amount of lean you get with an older car's suspension setup – one gets used to overly-stiff modern machinery and to see the Six leant over so far that the front mud-flaps drag on the ground was a little unsettling! If I ever get round to having the bodywork properly assessed then I think I'll have them removed as I don't like the way they look and the scraping sound they were making was most unnerving. I will also have a look back through the car's

history to see what shock absorbers were fitted (it has definitely had a set recently) as it's quite possible that they're a little *too* soft.

It was a most enjoyable trip in the car, though, and the amount of looks and thumbs-up it receives from other road users is most gratifying and part of this must be down to how few of them you see on the roads these days.

*Bob Harper*



### E24 M635CSi

**YEAR:** 1988  
**MILEAGE THIS MONTH:** 376  
**TOTAL MILEAGE:** 161,864  
**MPG THIS MONTH:** 24.2  
**TOTAL COST:** Nil



## The Everett Fleet

Joy of joys – the green E36 318i Touring sailed through an MoT last month. I tend not to bother with pre-MoT checks as I know when something feels odd and I service them quite regularly, having the wheels off for a look at the brakes and stuff like that. When the car arrived last August it needed front shocks, discs and pads on the front and the handbrake adjusting and as it ran well enough, there was a fair chance it would be okay.

And indeed it was, getting a pass certificate on the first try – even the headlights were aligned correctly and the brakes were perfectly balanced. But I did get an advisory on a perished offside front brake hose so feeling brave, I got a new one from Andrew Page Ltd on the way home and went to fit it the next day.

And of course, there was just no way the brake pipe union was going to undo. Despite dousing it with WD40 the day before and carefully wriggling it with the brake pipe spanner, it eventually snapped like a carrot leaving me with no brakes – terrific. On the E36, the front metal brake pipe goes through the inner wing, behind the engine with some spectacularly well designed clips that

can only really be undone with the engine removed, under the battery and into the ABS block. With crossed fingers and sheer good luck. I undid the right one from the ABS block, prised the pipe from the stupid clips and wrestled the old pipe out. A local factors made up a new copper pipe for about a tenner and this was fitted and the brakes bled in no time. The rear metal pipes are a little bit rusty but they're cleaned and greased for now – replacing these is a fuel tank out swearfest that I'm about to undertake on the blue 318iS. At least I'm replacing all the hoses on that one. The Touring will need this fun task undertaking before the winter though and again, you need to do the whole lot with all four flex pipes. Anything less is a waste of time.

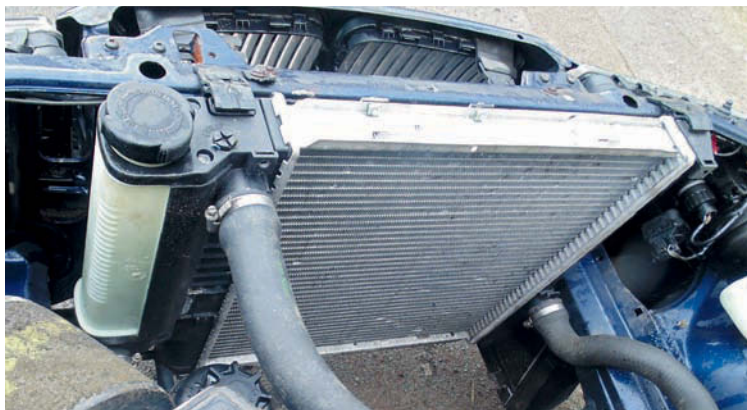
Finally on the green Touring, the heater fan. This has been intermittent for ages and some days it just won't work at all. Swapping a known good control unit in didn't fix it, and neither did a heater resistor. So I bit the bullet, removed the underbonnet cowlings and gave it a few shots of both WD40 and contact cleaner – with that, the motor sprang into life once prodded... fingers crossed!

*Andy Everett*





New engine in and steam cleaned; old radiator should be classed as an archeological find – I've never seen one this bad! Its replacement is a nearly new Nissens 328i radiator for cars with air con – it's considerably bigger



## E36 318iS Track Car Project

I have to admit, I've not done a track day for about two years now. It was one of the things I really enjoyed in life, me and my trusty 318Ti Compact buzzing round circuits at a decent rate of knots. Not that it was ever a proper track car – EBC pads, Eibach springs and occasionally some proper tyres as well. But it was all good harmless fun. However, buying another house and taking on more work put an end to it. The Compact was stripped and given a full restoration, so no more track days in it. I scanned eBay for suitable E36s but nothing turned up locally and I'm not driving 150 miles to look at a wreck.

But this 318iS Coupé popped up on eBay not once but twice. The first time it was sold to the inevitable timewaster and so was re-listed. The starting bid was £100 with 'a knock' from the engine and I could see a rust scab on the driver's front arch. I have another engine, so I chucked a £100 bid on and forgot all about it. Then an email pinged through saying I'd won. Bugger. Oh well, it's £100 and it's got black leather, so what's the worst that could happen?

So one cold but dry Yorkshire night in February I got on the train at Sheffield station with trade plates and emergency supplies and arrived at Pontefract about 50 minutes later. The owner was waiting, so off we went back to his place to pay for this prize specimen. It didn't look bad from what I could see in the dark – clean

rear arches, very good inside and... BY CHRIST, THAT NOISE! The 'knock' was about four loud knocks all in one package and it was obvious that nursing it 50 miles home was a non-starter. So I got as far as three miles to an excellent pub in Durrington and waited an extraordinary five hours for the AA to arrive. Having left home at 5.30pm to arrive home at 4.30am was no joke but at least in the pub I was able to enjoy a decent beer and burger with chips.

Once home and recovered, I ventured over to the workshop to have a better look at it the next day. It is indeed a decent sound base for a track car. Yes, the engine is knackered but the head has already been sold. The leather is worth £100 of anyone's money. And it has a Jetex stainless rear exhaust section – the middle and rear boxes. The suspension and brakes are all rubbish and fit only for the skip. The tyres are horrid and the engine bay resembles that U-boat that was recently rediscovered in the Thames Estuary. I have never seen such a disgusting under-bonnet scene in all my life although it's nothing a pressure washer and some Gunk can't put right though.

Finished in Montreal blue, this 318iS must have been a real honey back in 1994. Thankfully it's pre-EWS so there's no immobiliser nonsense to contend with but there is a sliding sunroof, a very heavy thing that will need to be removed. On the E36 it's

a complete cassette type unit that bolts into the roof and so is very easy to remove.

No time like the present – let's get stuck in. The boot trim in all its glory must weigh about 10kg as there's so much of it. It's all screws, 10mm plastic nuts and, as it's not going back in, you don't need to be too precious about it. I wasn't, and it filled the boot of my Merc nicely for a trip to the dump. The front seats unbolt with two 16mm nuts and two 16mm bolts each. The fold-down rear seats unclip in the centre and the side bolts and seat base just unclip and pull out. The rear shelf, rear speakers, headlining and rear quarter trim panels all came out without a fight and are all bound for the tip, although I need to keep those rear quarter panels to go with the seats.

Now, the carpet. I'm not sure whether to keep this as, along with front door trim panel, it helps to retain a degree of civilisation on long trips to circuits. So I made a compromise (for now) and with a Stanley knife in hand, sliced it in two in the area under the front seats, discarding the rear bit. I will remove the front bit as well to get all the sound deadening out and take a view on the whole carpet scenario later – it doesn't weigh enough to affect performance and makes the inside a more pleasant place to be and I'll be refitting the A-post trims as well.

So, what's to be done? After

spending a few hours pulling out interior trim, I bit the bullet the following day and pulled the engine out. Both engine mounts were knackered but the exhaust downpipe nuts came undone okay. The engine that is now in the car was also from a 1994 car, non-EWS, and virtually complete. After swapping over the flywheel, clutch, gearbox, as well as a few other minor bits, the whole lot was heaved back in but not before replacing a couple of very rusty brake pipes and removing all the heavy sound deadening on the bulkhead and tunnel areas. With the engine in, along with a big capacity radiator, it fired-up and the M42 sounded sweet enough after it's two-year lay up. The original radiator was just a joke – I have never seen a rougher and more utterly ruined rad that actually held coolant. Needless to say, that went the same way as the engine: on the back of the scrap truck. After removing the cylinder head, I pulled the sump from the old engine out of morbid curiosity and found that whilst three big end shells were down to copper, the big end shells on number four were actually missing and the noise was the con rod against the crank pin – amazingly, the oil light still went out once started.

Still, the car now runs and drives and is now a basis for the other things we have in store for it. Catch up next month!

Andy Everett



As it arrived, a straight and standard 318iS, very tidy but ripe for what I'm going to do



## E36 318iS Hit List

**ENGINE:** It needed one and it got one. I may well whip the front cover off and fit a new chain because I have one here. The clutch wasn't very old and the engine went in with just an oil and coolant change

**SUSPENSION:** Bilstein dampers and coilovers. I have these in stock but the front coilovers need stripping and a good clean up – the springs are rusty and they look generally a bit rosey. E30 front wishbones, M3 eccentric rear bushes, new rear trailing arm bushes and a front strut brace. The later 'purple tag' E46 rack has a quicker ratio and is a direct swap – considering how cheap they are now, I'll probably fit a new one. Z3 racks are too expensive and too old now

**BRAKES:** Standard stuff but new and not rusty old junk. The brake pipes and flex hoses are all dreadful so they all need changing – simple enough when you're doing it all and not trying to save some of it. Standard Pagid discs (vented fronts) but EBC Yellowstuff pads and DOT4 fluid. The callipers look rough but may well go again with a good clean up

**TRANSMISSION:** Standard gearbox and clutch but a short-shift gear lever from eBay seller ShortshiftersUK. These are well worth having and are a mere £20.99. Standard diff and new oil in both the box and the diff

**WHEELS & TYRES:** Two sets of 16-inch BBS cross-spokes – one with well treaded tyres and another with some very well worn Maxxis rubber that I've used before – well scrubbed!

**BODY & INTERIOR:** Leave the body as it is but I have a Montreal blue M3 front bumper to go on. The bumper bars can be extensively lightened and both the bonnet and boot can be lightened by cutting the frames out with an air saw. The interior is already out but there are a few kilos of stick-on sound deadening to chisel off before it can be painted inside. Remove the glovebox assembly, the passenger window winder mechanism and secure the door glass to save weight – perhaps I can make some Perspex rear side windows? Inside, a decent seat with a harness and a decent steering wheel... that's it!



40 minutes work got the boot to this stage; this pile is what came from the boot – must be 5 or 10 kilos here alone; short-shift cheap and a worthwhile upgrade





# E46 330d

The fourth generation 3 Series still stands up well as a great second-hand buy and the 330d in saloon form offers a package like no other on the market

Words: Simon Holmes



## History

The first true performance diesel version of the E46 arrived in the UK back in early 2000. The 2926cc turbocharged M57 engine that powered it had already been fitted in the E39 5 Series, but in the smaller and lighter 3 Series body it formed an impressive package. With a potent 184hp and 287lb ft of torque to match, performance translated to 62mph from rest in 7.8 seconds, whilst still managing to post a respectable 41.5mpg average when connected to the five-speed manual gearbox. With the popular five-speed, Steptronic automatic option, performance and economy dropped to 8.2 seconds and 35.3mpg, whilst top speed was 141mph for both transmissions.

Prices started at £26,995 and standard specification was high. It included 17-inch wheels, electric windows front and back, air-con, rain sensor, on-board computer, cruise control, parking sensors and a multifunction steering wheel. The 330d came in either SE or Sport trim levels, the latter of which gained 18-inch wheels, sports seats and suspension, an aero body kit and Alcantara interior with anthracite headlining. A leather interior, an electric sunroof and Bi-Xenon headlights were all options that were often selected.

Halfway through 2001 the E46 was given a face-lift. It gained slightly sharper lines, different bumpers front and back, sleeker headlights and

jewel-effect tail-lights. In 2003, the M57 engine received a makeover and came connected to a six-speed gearbox as standard, although the five-speed Steptronic remained. Capacity was now 2993cc and power jumped to 204hp and 302lb ft of torque, which translated to a significant improvement in performance as 62mph came in 7.2 seconds and top speed was upped to 150mph. The automatic version benefited even further, as 62mph arrived in 7.4 seconds with a 146mph top speed. Fuel consumption and emissions were marginally improved for both models. The 330d ran until the end of E46 production in 2004 when the fifth generation of 3 Series arrived to replace it.

## Why should you buy one?

The introduction of the 330d marked an end of the dominance for large petrol powered models and the start of new wave diesel technology. Whilst the 330d might not possess the kind of blistering pace that a lot of new diesel models do, it's still a fast road car. But more importantly, the E46 can be considered the last of the mechanical age 3 Series models before electronics took an overwhelming stronghold. That alone makes it feel different and more fun to own and drive now. An E46 in good health is both engaging and rewarding, and the 330d incorporates that into a package virtually no other BMW is able to match. Whether you're planning on using the car as an everyday runabout or something different to enjoy the weekend in, the 330d ticks just about every box there is in the practical performance section.





## What goes wrong?

For a start, there's rust. Front wings are most likely to go first, so check along the lip of the arch for bubbling paint. New replacements are actually cheap to buy and relatively easy to fit, but the painting makes them more costly. Rust also affects the rear arches and sills but not quite as badly.

The notorious swirl flap issue is the biggest problem to worry about when it comes to the engine. These flaps, located inside the inlet manifold, develop a tendency to fall into the engine, causing catastrophic failure. On early lower powered engines, swirl flaps were only fitted to automatic cars. Both the manual and automatic versions of the later, more powerful engine had swirl flaps but from mid-2004 the swirl flaps were revised to a stronger design. Any car likely to be affected should have these flaps removed and due to the popularity of the problem it's possible it's been done already, but look for proof in the paperwork or consider getting them changed yourself. If they do fail, you'll wish you had.

Other issues to be aware of are failing oil separators, EGR valves, injectors, thermostats and air mass meters that cause irregular running or poor performance. Slightly more serious and

expensive is a failing turbo, so listen out for excessive noise and look out for plumes of smoke. Last of all is the cooling system. As time goes by it tends to corrode, so check to make sure the car is not running hot or losing water. If it is, then the radiator, header tank, water pump and hoses are all possible candidates.

On the plus side, the transmission side of things is strong, but gear changes for both manual and automatic can become notchy over time. This is usually cured, or at least massively improved, by simply changing the gearbox oil. Suspension wise, the E46 loves to eat a front control arm bush. You will know it needs one from a knocking noise over bumps or from a loose feeling through the front end at speed. An alignment check is needed after fitting the bushes, too. Trailing arm bushes are also known to wear, creating a similar knocking noise at the rear, but be vigilant, as the much more serious cracked rear subframe issue has been known on 330d models that have endured a hard life. A strange whining sound from the steering is likely to be low power steering fluid.

Last of all, faulty window regulators are common – slow operation shows it's about to go.



### E46 330d: 2000-2003

**ENGINE:** Six-cylinder, turbo diesel, 2926cc

**MAX POWER:** 184hp

**MAX TORQUE:** 267lb ft

**0-62MPH:** 7.8 seconds (8.2)

**TOP SPEED:** 141mph

**ECONOMY:** 41.5mpg (35.3)

**EMISSIONS:** 178g/km (213)

*Figures in () for automatic transmission*

### E46 330d: 2003-2004

**ENGINE:** Six-cylinder, turbo diesel, 2993cc

**MAX POWER:** 204hp

**MAX TORQUE:** 302lb ft

**0-62MPH:** 7.2 seconds (7.4)

**TOP SPEED:** 150mph (146)

**ECONOMY:** 42.8mpg (36.7)

**EMISSIONS:** 177g/km (206)

*Figures in () for automatic transmission*

## Running costs

Although in theory an E46 could be run on a shoe string, these cars are getting to the point where they will need looking after if you want it to stay reliable. So be sensible, and budget for monthly maintenance. Aside from that, these cars can be frugal on fuel. On a stable, long distance run it's possible to see mpg in the high 40s or above if you're really careful. Around town that will drop down into the 20s with relative ease but a steady amount of mixed driving should see an average into the 30s.

When it comes to tax, there isn't much between the earlier or later engines and manual or automatic transmissions. Even with the 2001 crossover that saw



cars taxed differently, prices didn't change much and as a general rule the manual models are £225 a year to tax whilst the automatics are £285.



## How much to pay?

You can enter into 330d ownership for as little as £2000 but you will be getting a car in need of a little work with around the 150,000 miles on the clock. Sport models aren't too hard to find but manuals are rarer, with around double the amount of automatics out there. Paying nearer to £3000 will give you a wider range of cars to choose from, most of which

seem in better shape, but mileages will still be over the 100,000 mark. This isn't a major problem as long as you look for signs the car has been well cared for. The nicest, last-of-the-line 330d models with the better engine and six-speed command more, and those with less than 100,000 miles on them are going for as much as £4000-5000.

## Verdict

With even the youngest E46s now ten years old, there is a fair amount to look out for so be aware of what you're buying and the common issues you will encounter. These cars have got to the point where the good ones shine through the crowd relatively easily, but there are plenty on the market, so choose which is best for you. The 330d isn't the most efficient model, but if you want economy, look at a 320d instead. What the 330d loses in economy it makes up for in performance and that's the whole point of the car. It's a true performance saloon and the first of its kind to offer some kind of fuel-efficient practicality, too. For what you can pick one up for and what it offers in return, it's a car well worth a look even if you fancy one to have some short-term fun in.





## Write and win with Meguiar's!

We've teamed up with those car cleaning wizards at Meguiar's to provide the winner of the best letter each month with a fabulous Meguiar's New Car Kit. This superb kit includes Ultimate Wash & Wax, Ultimate Wax, Endurance Tire gel, a Microfibre Wash Mitt, a Water Magnet and a Soft Foam Applicator pad worth £34.99!



### Sat nav sorrow

I was pleased to notice that at long last BMW is offering cheaper sat nav options when it comes to their new cars. But why has it taken so long? For years they have been charging what I can only describe as extortionate amounts for sat nav systems. Whilst I understand they may work very well, other rival manufacturers have been offering a range of entry level, less sophisticated sat navs that do the job of getting you from A to B just fine for far less money. Anyway, it seems I've missed the boat, as my F20 1 Series does not have sat nav. But it does have a large screen display in the centre of dashboard. So I want to know if there's an easy way to add the sat nav function to the existing system? I'd like to think it's just a matter of putting in a disc, but I suspect you're going to tell me it's a lot more complicated than that.

**John Swanton**

*It's a good point you bring up John, BMW's sat nav systems have always been a pretty expensive option whereas both Audi and Mercedes have offered far cheaper solutions. It's only since the introduction of iDrive and the standard fit display screens that sat nav prices have started come down... although many models have it as standard now.*

*As for your car, the good news is that yes, it does seem to be possible to add, or rather convert your existing system to sat nav. The bad news is there is a lot to change, it requires some specialist coding to get it all working properly and worst of all, it's very expensive.*

*The general consensus seems to indicate that it will cost a few thousand pounds in fact, and for the price, it's easier just to buy a portable sat nav such as a TomTom or Garmin and use that.*



### xDrive excitement

A few years ago I wrote a letter to BMW Car asking it to pay more attention to the X-family. This time I write to thank BMW Car for all the attention the xDrive BMWs have got in the past year or so. As not all BMW enthusiasts (including myself) are as gifted as Roberto Ravaglia in a rear-wheel driven car, the xDrive technology really is a feature that adds joy and safety to driving. To me xDrive has a great future ahead, even to M cars.

**Bert Coenen**

*We're glad the content is to your liking Bert! xDrive cars certainly add an extra sense of reassurance for the driver and there's no denying the system is extremely effective; you can't seem to catch it out, and we've tried!*

*As for the xDrive M cars, we're not sure many others will be as welcoming to the idea as you are but, opinions aside, it does make sense in many ways. With plenty of rivals now featuring all-wheel drive technology for their performance models there's no doubt the M cars could be made even more effective with xDrive. Perhaps not as enjoyable or as engaging, but more effective none-the-less.*

### Hola from Spain

As a reader in Spain and owner of several BMWs, I am trying to contact the editor, Bob Harper. If my memory isn't failing me, he had problems with the mass meter in his E34 M5, so he sent it for repair in the USA. I've lost that particular issue and I want to read about it again, as the one in my M635CSi is suffering similar problems. If the solution went well and the new owner of the M5 is happy with it, it would be great if he could reply, so I can repair mine.

**Javier Esquer**

*was called Injection Labs, based in Colorado. You can get in contact via [www.injectionlabs.com](http://www.injectionlabs.com). The company were a pleasure to deal with and as far as I'm aware the meter is still working correctly.*

*However, I'm fairly sure I'm right in saying that the M635CSi uses an Air Flow Meter (shared with the E28 M5) and these parts are still available to buy new and are also much easier to repair. I only had the M5's MAF repaired in the US as I couldn't track down a UK-based company to repair it. In the case of the M635CSi I'd recommend buying a new one or having your repaired locally rather than having to send it all the way to America – BH.*

*It was in July 2014 that I had the M5's poorly air mass meter restored to good health. The company*





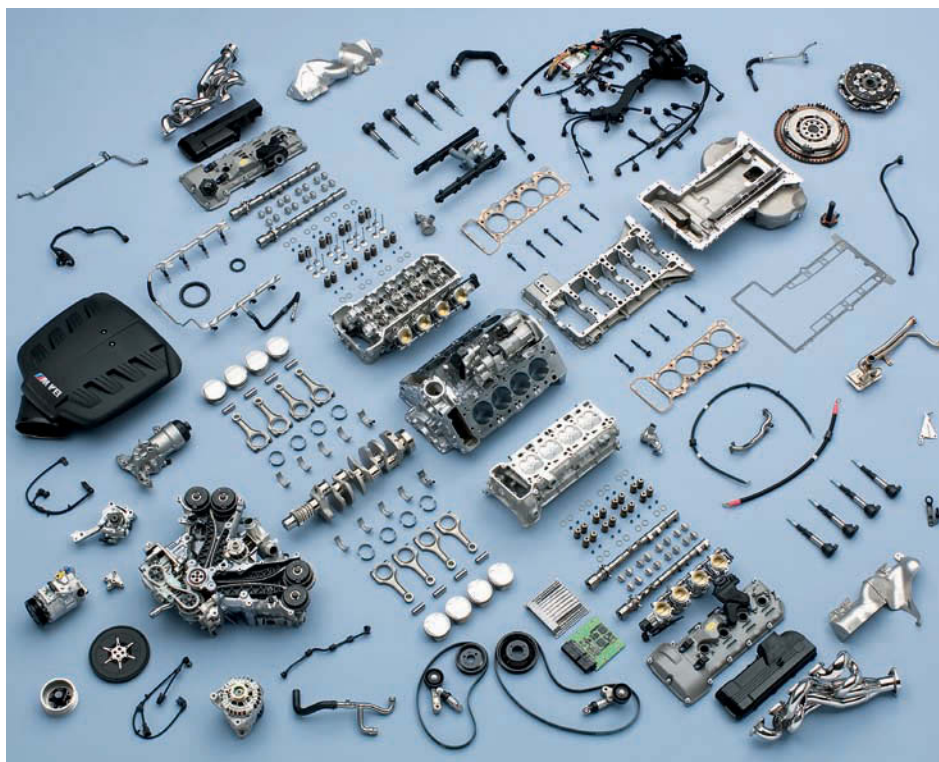
## Tactful tips

I must agree with Gordon Dunsmuir's comment about part prices (*Post Bag*, March 2015). Although I don't agree with his final comment that "cars cannot be maintained with original parts as the price becomes completely prohibitive..." I've just about saved the total cost (tongue-in-cheek) of my E34 B10 over the past 20 years of ownership because I refused to pay silly prices for parts and service at dealers, although I do admit to using them occasionally. Since the internet began I've searched for parts online from around the world with great success, and with everything delivered to my door in Australia, all OEM, and nothing ever lost. The best part is the cost, including shipping, has always been a fraction of the local dealer price.

I still own the B10 and only recently grabbed a part from Latvia to send down, a very elusive positive terminal cap for the engine bay. OEM and only £6.00 delivered from Latvia to Australia. In fact, my current Latvian contact can, apparently, also supply new and used OEM parts at will, at very reasonable cost.

OEM parts are far more readily and easily available from the internet now compared to how it was when the internet was in its early days. Even for the E34 and earlier cars, just about everything from the smallest screw or clip, body parts, lights, modules etc to a complete gearbox or engine is obtainable. Admittedly, sometimes it takes some searching and price-comparing but I eventually have success. In fact, the 'net is now so sophisticated one only has to obtain a correct part number, also from searches, and enter it into the box and hit 'search' and up comes thousands of choices where to obtain that part. And if one wishes to search for the photograph of those parts, use the word 'pics' with the number and go through the hundreds of photographs. Brilliant I reckon. Whatever did we do 30 years ago?

*BMW Car's* answer to Gordon also struck a note with me that "perhaps BMW charge high prices on purpose". I totally agree. I would suggest that, these days, most manufacturers do the same thing so when a car is in for service the OEM parts box gets raided at *their* price. If a lazy customer simply wanders to the dealer parts counter, he will be stung. I haven't spent a lot of time figuring out how online sellers of genuine parts get their parts and I don't really care. If the parts are a fraction of dealer



prices and the part is actually genuine, who cares?

A word of warning though; in this age where so-called 'genuine' parts are duplicated extremely cheaply and in abundance, then trafficked from places like Asia, one must be careful. Another thing I've noticed recently, mostly from USA, are OEM parts advertised/supplied at very reasonable prices but with a nasty twist. Shipping costs can be ridiculous, and I suspect, wildly inflated to cover the initial part price. So, buy the part thinking you have a bargain and *whammo!* you're struck with the shipping charges, plus sometimes, an import tax by the receiving country. It can hurt. I recently wanted two oil canister bolts for the E39, advertised price £2.60 (\$4) each, 'shipping' £37 (\$56). BMW AG price was around the same £40+ shipping! So who's fooling who?

One thing recently made me smile whilst searching. I came across a site, written in English, with good prices and range, with phone numbers and street address, except no internet address, no suburb or country! I initially dumped the site but was

intrigued as to where it actually was. France. I guessed they may have built their own site and left out the final word... *they* knew where they were, just forgot to tell others.

And totally unrelated; Bob Harper's editorial in the March issue raises the question about the increasing difficulty of identifying different models. Ain't that the truth! We all used to play the game of spot the model now it's spot the brand, if you can. I always used to look out for other BMWs in the outback and give a wave. Now I don't even bother to figure out what the brand is.

Jim Huet

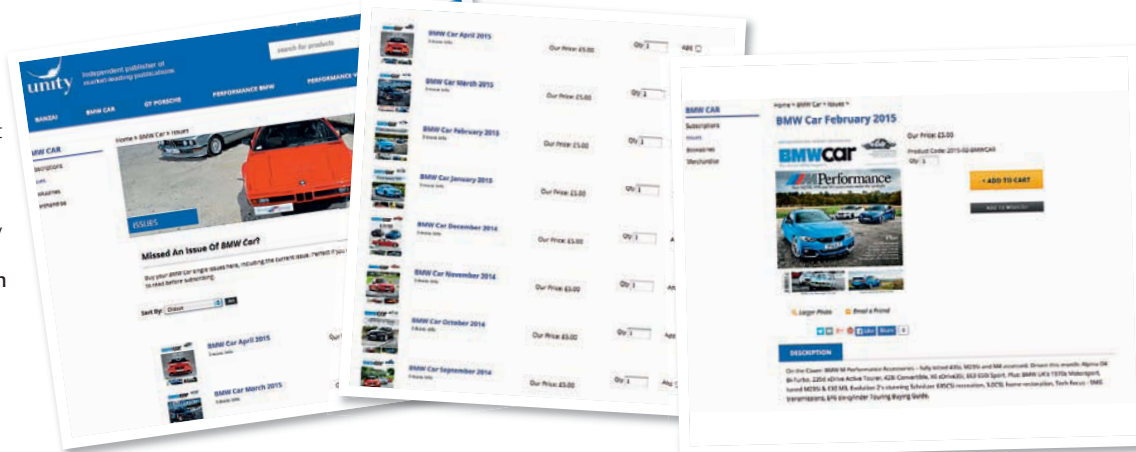
*Thanks for writing in Jim. You're clearly a man that is well educated when it comes to sourcing those sometimes-elusive parts on the internet. Hopefully your advice will help other readers safely venture down that road! And as for BMW's identity crisis; don't give up on it just yet! You know an i8 when you see it, that's for sure!*

## Back issues

I'm a keen reader of the magazine but have been working away for a few months and missed the January 2015 and February 2015 issues of the magazine. Is there anywhere I can buy them other than resorting to eBay?

Ed Holden

Yes, you can buy back issues from [www.bmwcar magazine.com](http://www.bmwcar magazine.com) or download them digitally via [www.pocketmags.com/bmwcar](http://www.pocketmags.com/bmwcar).



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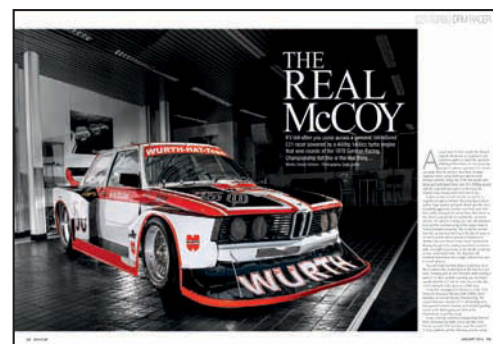
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# SUBSCRIBE TODAY







# BMW Buyer

Our monthly look at what's hot, or not, in the BMW marketplace

Words: Guy Baker



The UK new car market has gone from strength to strength with BMW being one of the key movers. While many expected new car sales to be at a similar level to those recorded in February last year, the Society of Manufacturers and Traders actually reported an increase in sales of 12 per cent for February 2015 – with the major growth in the fleet sector. BMW now hold a 5.4 per cent market share for 2015, up 19.5 per cent on 2014, and with Group revenues up 5.7 per cent to €80.40 billion the BMW Group posted its best global February sales – 151,952 BMW, MINI and Rolls-Royce vehicles were bought.

Approved Used BMW sales are also performing well: “From a used car perspective sales pitches have retained a high level of activity and demand for most models has remained firm,” says Rupert Pontin, head of valuations at Glass’s. “BMW’s appeal is growing as used buyers respond to the halo effect from some of the new models that BMW has launched over the last six months.” As a result, most used BMW values have remained in line with the rest of the market.

Nearly-new customers seem to be especially drawn

to newer niche models, such as the X4, 4 Series Coupé, 6 Series Gran Coupé and X3, while buyers of older used BMWs are seeking out diesel 1 Series and 3 Series models. Unless the model has a low spec, discounts on these two used BMWs are becoming harder to glean. On a more positive note for bargain hunters; the 3 Series GT model remains a difficult sell, and the 5 Series GT is proving even harder to shift.

Check out your local BMW dealer and you’ll discover some attractive BMW 1 Series contract hire deals right now. With no need to worry about depreciation or selling the car on, you could have nothing more to pay at the end of the agreement. A 116i Sport five-door hatchback is £249 a month including VAT over 48 months, while a 120d xDrive M Sport is £289. You’ll have to put down a large initial rental (effectively a deposit) so compare any contract hire deal with other available finance options.

Alternatively you could get a decent online discount on a new diesel 1 Series, with [www.broadspeed.com](http://www.broadspeed.com) offering discounts of £1339 on a 114d ES 95hp five-door, £1422 on a 116d SE three-door and £1644 on a 120d SE 184hp five-door hatch ●

## Top three £25,000 5 Series estates

As mentioned earlier there are some really good deals to be had on used 5 Series GTs at the moment. But if you just can’t live with the looks of the GT, then a 5 Series estate offers even greater practicality – without any of the visual drama. These three £25,000 contenders all make appealing used buys.



**535d M SPORT  
TOURING (F10)  
(2010 TO 2012)**

Fast becoming a classic choice for those seeking power and practicality with substantial future tuning potential. Twenty-five big ones bags a pre-face-lifted example with around 80,000 miles on the clock and a 5.7-second 0-62mph time. Chuck in 35mpg and an annual road tax bill of just £180 and a 535d M Sport Touring is damned hard to resist.



**520d SE  
TOURING (F10)  
(2012-ON)**

Fancy a new face-lifted F10 for the same money? Then look no further than the 520d SE Touring. With 184hp the performance is still good enough for most situations and the running costs are a lot lower – with over 60mpg possible on long runs and a £110 a year road tax bill. £25,000 will put you behind the wheel of a 20k-mile minter.



**M5 TOURING (E61)  
(2005 TO 2010)**

No introduction needed here. An exclusive engine and quite possibly the last of its kind we’ll see on these shores. It delivers 507hp in a unique way – with a £25,000 budget sufficient for a 35k-mile face-lifted example, packing more toys than Hamleys. However, 18mpg (if you’re lucky!) and 361g/km of CO<sub>2</sub> mean you will need deep pockets to run one.

Many thanks to John Warren Cars ([www.independentbmw.co.uk](http://www.independentbmw.co.uk)) for its assistance with BMW Buyer



THIS  
MONTH'S  
BEST BUY!**BMW 530d GT  
(F07) (2009-2012)**

With the 5 Series GT currently unloved by most used buyers there are some serious discounts to be had. If you can see beyond the styling a BMW 530d GT offers pretty serious metal for your money with 2010 examples struggling to sell for £17,000.

With 245hp on tap the 530d GT does 0-62mph in 6.9secs, 43.5mpg on the combined cycle and road tax is currently a very reasonable £205 a year. And most used examples have high specs with plenty of optional extras. Offer 10 per cent under the asking price and negotiate from there.

AUCTION  
SPOTLIGHT

*BMW Car's* lowdown on the latest prices paid for average condition BMWs at auction. To find your nearest auction house check out: [www.british-car-auctions.co.uk](http://www.british-car-auctions.co.uk)

**And remember...**

Always arrive early at car auctions, pick up the sales catalogue and examine the vehicles in the line-up before the bidding starts. In addition to the hammer price, you'll have to pay a small buyer's fee. You'll need to provide a deposit of at least £500 (in cash or by Maestro or Visa Delta debit card) but the balance of the purchase price and the buyer's fee can be paid via banker's draft, cash, cheque, telegraphic transfers, credit or debit card.

**Prices paid last month for average condition BMWs at auction**

Model	Trim/transmission	Year/registration	Mileage	Price
330i	Sport Saloon, auto	2002/52	71k	£1650
530i	SE Saloon, auto	2003/53	105k	£2850
X5 30d	M Sport, auto	2004/04	105k	£6450
645Ci	Convertible, auto	2004/04	59k	£7300
535d	M Sport Touring, auto	2005/05	65k	£8400
Alpina D3	Bi-Turbo Coupé, manual	2008/58	121k	£8550
650i	Coupé, auto	2006/06	74k	£9450
320i	SE Business Edition Touring, manual	2010/10	50k	£10,050
120d	M Sport Coupé, manual	2010/60	47k	£10,200
320d	Exclusive Edition Touring, manual	2011/61	78k	£10,300
320d	SE Convertible, auto	2012/61	43k	£15,800
318i	Sport Plus Coupé, manual	2012/12	11k	£16,700
118d	M Sport Convertible, manual	2013/63	23k	£18,200
320d	M Sport Convertible, auto	2011/11	16k	£19,300
640i	SE Convertible, auto	2012/12	16k	£31,750

*Prices quoted are hammer prices and will be subject to buyer's premium*

**Forecourt find****PREACHING TO  
THE CONVERTED**

Truly immaculate E46 M3 Cabriolets are becoming thin on the ground, so we were delighted to unearth this concours 23,560-mile Carbon black example at Guildford-based performance specialist Millennium Heroes. A face-lifted SMG 2 version, this 2005/55-plate M3 comes with a complete BMW main dealer service history, plus a file containing all the BMW service and repair invoices and MoT certificates. A comprehensive spec includes red Nappa leather upholstery, 19-inch alloys, sat nav, a Harmon Kardon sound system, electric heated memory seats, Xenon headlights, climate control, cruise control, and rear parking sensors. Asking price for this future classic is a hefty £21,995 (with 12 months MoT) but we're sure there's some scope for negotiation.

Web: [www.millenniumheroes.com](http://www.millenniumheroes.com)

Tel: 01483 338 902





## FROM THE ARCHIVE...

Another selection of back issues showing what we were up to five, ten and 15 years ago



## May 2010

It was in this issue that we reported that at BMW's annual accounts conference (not usually the most riveting of affairs) the chairman of the board, Norbert Reithofer, dropped the bombshell that: "There will be front-wheel drive BMWs in the smaller vehicle classes in the future." The internet nearly crumbled under the weight of opposition to this statement but here we are, five years later and these cars have become a reality. We still don't think the BMW enthusiasts are particularly happy about it though!

Our cover story centred on the debut of the new F10 5 Series Saloon when dep ed Seb piloted a 530d SE back from the south of France and concluded: "The F10 is the best 5 Series to date, the class leader in terms of performance and economy and possibly the best all-round car that BMW produces today. Its breadth of abilities is so great and it does everything so well that you can't help but wonder how it could possibly be improved."

F10 5 Series Saloon when dep ed Seb piloted a 530d SE back from the south of France and concluded: "The F10 is the best 5 Series to date, the class leader in terms of performance and economy and possibly the best all-round car that BMW produces today. Its breadth of abilities is so great and it does everything so well that you can't help but wonder how it could possibly be improved."



## May 2005

We had a full range of features this month ranging from tuned beasts, the latest road tests, a dash of motorsport and a liberal sprinkling of classics.

The main tuner car was Discovery Automotive's E39 M5 that featured a host of changes to make it at the time the world's most powerful E39 M5 – kicking out an impressive 600whp.

Holtam travelled off to Spain to drive an E90 330i back to the UK and paid a hefty €750 fine en route for doing 207km/h... lucky he wasn't clocked at the indicated 260km/h he was doing for the obligatory flat-out speedo shot!

It was also Holtam who was lucky

enough to try out a rather special E36 M3 Evo that had been given the full AC Schnitzer CLS treatment. Truth be told he was never the biggest E36 fan but he raved about this car: "It's not only the best-looking E36 I've ever encountered, but it's one of the best-handling BMWs I can ever recall testing." High praise indeed.

We also sampled a Hartge H5 (an E34 Five complete with the company's 4.7-litre V8), an Alpina B10 Bi-Turbo, drove a MINI around Las Vegas and the editor was most annoyed at destroying two alloys on a pothole in his E46 320d!



## May 2000

This issue marked the end of an era as it was the last one to feature Charles Armstrong-Wilson as the editor. Charles had been editor for four years and he was responsible for building the magazine's strong following in its early years.

Our cover story featured the new E46 3 Series Convertible, although the cover shot was perhaps rather an unusual angle of the car. Perhaps the biggest news this month though was that BMW had sold Rover with Land Rover and Range Rover going to Ford and the Rover and MG brands being sold to Alchemy, a story that didn't end well.

Perhaps one of the most interesting pieces in this issue though were two 2002tis that had been restored at a cost of £40,000... each! We thought the owner must have been mad before we went to see the cars but once we'd looked them over and given them a drive we could see their appeal. Oh and on the subject of money our classifieds had the following gems: E30 M3 Evo II (£9500), a Cecotto (£8500) and an Alpina B7 Turbo for £5750. Makes you want to cry!

## BMW IN ADVERTS

A trio of ads from the 1980s this month with the 323i, Alpina B9 and the E32 750i range-topper

## 1982: E28 Alpina B9



"Are you ready to go beyond the Supercar?" this Alpina advert asked when extolling the virtues of its B9. It reckoned 245hp "demands respect" and that its "luxury saloon" could "accelerate, corner, overtake and dominate the road in a way that only impractical two-seaters have ever done before."

It reckoned Alpinas were driven by "automotive gourmets to whom other so-called supercars are, simply, less than ideal." It concluded that on a test drive was actually more of a driver test and that you'd "experience standards of performance and refinement which make the term 'supercar' seem suddenly inadequate."

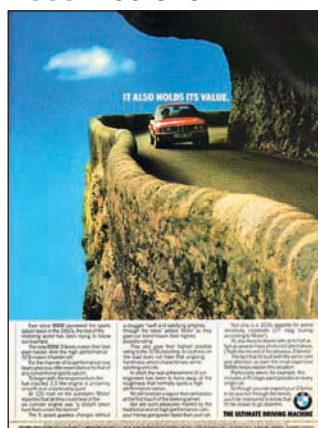
## 1988: E32 750i/iL



BMW made a big deal about the V12-engined E32 back when it was new, and rightly so, as it was the first German V12 since the second world war. The advert reckoned it contained: "Engineering with only one aim: making the passion for driving more

cultivated than ever." Its engine was said to have: "Enormous power reserves... superb smoothness of running and breathtaking driving performance" and this "highly sophisticated engineering" was "virtually maintenance-free".

## 1983: E30 323i



The irony here is that while E30s have a reputation for being wayward in the handling department here's an advert claiming the exact opposite while adding that its depreciation will be as good as its road holding.

It used quotes from *Motor* to describe the 323i's virtues. Its engine gave "a silky hum" while the handling was "taut" without any "harshness". The ad also said the 323i was likely to depreciate "up to half as fast as several mass produced alternatives". It concluded: "So though you can expect your 3 Series to be quicker through the bends you'll be reassured to know that it'll be slower to go downhill!"



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## F10 quality?

I'll make no bones about the fact that I really rate the F10 5 Series – it's a lovely car from just about every viewpoint. However, I've been hearing tales about some issues – nothing major, but the sort of thing that takes the shine off ownership. The first is the white symbols being worn off switches and heater controls. That's no big deal really but it gives the impression that the switch was manufactured by a company that didn't really care. The switches on an E34 didn't do that. I heard about the stitching on a leather seat bolster coming undone the other day and it's on a seat whose leather is still unworn so it's not a 135,000-mile car with a sales rep the size of Geoff Capes at the wheel. This is the price you pay for cheaper cars.

Well, let's examine this one – 20 years ago in 1995, an E34 520i SE with cloth trim and no air-con cost £23,995 and 20 years later, a 520i with AC, 'nav and leather costs just £8000 more when house prices and wages have more than doubled. With the E34 and Mercedes W124, the makers designed the car the best they could, spec'd the materials highly and gave the very expensive end result to the sales guys to add a profit margin – that's why a 520i in 1995 was the equivalent of £45k today, why few could afford to buy one and why it would race up to 200,000 miles on one exhaust and battery.

Today of course, all cars short of a Rolls Royce are cost-pared under the skin and the reason nobody makes a car as robust as the E34 or the W124 Merc is because nobody would pay for it and they'd go out of business – times have changed. I'm not keen on the standard BMW leather anyway – in an ideal world I'd spend the extra two grand and have an artisan hand-stitching my Nappa leather.



## Old radios

Back in the days of the E30, a radio was an pricey optional extra and the radios of choice were made by Blaupunkt – many base model cars came with a Blaupunkt Cambridge radio cassette player. By the time the E36 arrived in 1991 this was becoming less acceptable and a standard radio began to be phased in on BMWs. By 1993 this was normally a BMW RDS cassette player by Philips and by 1995 they were standard pretty much across the board. This Philips unit was of high quality and was also easy to use. It even had a plug on the back to take a CD player lead. However, that didn't stop some owners 'improving' on this. My 1998 E36 318i Touring is a prime example – the original radio had been replaced by some Sony unit from the Nineties

that was harder to use and made that annoying bleeping noise when the ignition was turned off. It wasn't good at picking up stations and the sound quality wasn't great.

As a result, many owners of BMWs from the Eighties and Nineties are reverting to a proper radio. These days, a good working 20 year old BMW Philips cassette player with a code and good pixels is £50 and rising; they'll be £100 plus soon as stocks are dwindling, whilst high-end Blaupunkt radios such as the New York are already approaching £200. I was lucky to find a perfect original BMW RDS unit from a 1999 Compact for a mere eight quid and it's looking and sounding fine in the dash. The outgoing Sony is on eBay for a similar sum as we speak, and good riddance to it.



## E46 bulb holders

Most things that BMW do are an improvement on what went before, but not always. Take the 2001-onwards E46 face-lift Saloon for example. On the previous model that arrived in 1998, the connector plug that slots into the rear bulb holder was never a problem. Nor was it on the E36 before that or any other 3 Series. But for some reason or other, they are a known problem on the face-lift E46 that arrived in September 2001. Coupés and Tourings don't appear to be affected – unless you know otherwise. The problem is pin number two on the connector block for the brown earth wire. This just burns out and occasionally there is smoke and melted plastic involved and just about every relevant aged E46 Saloon I've seen has had both new plugs as well as the main bulb holder. These aren't too expensive new – about £25 for the bulb holder and £15 for the plug and a set of white wires that you solder into the existing loom. The earth contact simply isn't up to the job so you need to unplug it and examine both the plug and the contact in the bulb holder – you may well find that the pin is burning away just as it goes into the plastic bit. How to cure it? As well as buying a new plug and bulb holder, I've heard that adding an extra earth point on the bulb holder takes the strain away from that single earth wire.





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## E46 Compacts

It's odd that despite the runaway success of the original E36 Compact, the 2001-onwards E46 version never really repeated the same sales numbers despite being a much better car. Some odd styling – particularly the Lexus style tail-lights on the originals – probably didn't help it but if you're buying an E46, the Compact is the one to have.

Firstly, that third door is immensely useful – I can never understand why anyone would buy a Saloon these days. Secondly – the Compact doesn't rust anything like as badly as the other E46 models. The front wings and rear arch rust that seems to blight the rest of the E46 range just doesn't seem to happen on the Compact. You will find rusty examples of just about anything but Compact E46s are a lot better than the rest.

Problems? The inevitable N42 and N46 dramas on the 316ti and 318ti – timing chain and tensioner, oil leaks and so on. The 320td likes a turbo and many will be due a new one plus those swirl flaps need binning. The 325ti though was a cracking car and is clearly the one to buy if you can afford to fuel it. Look for the usual knackered radiator, blocked breathers and rusty brake pipes that afflict all E46s. Make sure the windows go up and down too as Compact window regulators are different to the others – and they are BMW-only with no aftermarket alternative. If you must go four-cylinder, a 318ti is a decent thing. Just invest £500 from the outset – new chain and tensioner, cam cover and vacuum pump gaskets and a crankshaft position sensor. With fully synthetic oil it should be good for another 70,000 or more at 40mpg.

## E34 M5 EDC

When it was new, the Electronic Damper Control (EDC) system on the 1991-onwards 3.8-litre M5 was a great idea. Not only did it have the self-levelling from the previous 3.6 model but EDC meant that the dampers would always be at the right setting thanks to the computer that controlled them. When BMW stocked them, a set of four Boge EDC shocks was in the region of four grand, but stocks of new ones are running very thin now and you can bet your life that Boge isn't going to start making them again for such a limited run car. The choices then were either look big and pay up, try and find used ones (good luck with that) or convert to non-SLS and non EDC suspension. This involves a pair of post-1991 E34 or E32 front legs (they're the same), a set of four Bilstein B6 or B8 dampers, a suitable spring kit from the likes of Eibach or H&R as well as four top mounts and an E34 535i power steering pump. A lot of labour is involved in the conversion when you factor in removing the old SLS pipework and spheres plus the wiring for the EDC – reckon on ten hours. The result though is a good handling E34 that will always be serviceable and reliable.

However, a company called PUH Nagengast in Poland ([www.nagengast.pl](http://www.nagengast.pl)) is rebuilding knackered E34 M5 shocks amongst others. The cost depends on how bad they are and there will always be a scenario where one damper is too bad to repair – for example when the damper shaft is rusty. I'm told a standard rebuild is around £300 a corner and the finished article looks impressive. If the rest of the system – the ECU, wiring connectors, SLS pipework and spheres – are okay, this is a good option. Otherwise, chucking it all in the bin and going the Bilstein route is the sensible choice although opinion seems to be slightly split on whether this will adversely affect a car's value in the future. Ultimately, as numbers dwindle, an all original M5 with fully-functioning EDC will probably be worth more one that has been converted to the Bilstein option.



## M30 tappets

I doubt many readers will be running a BMW old enough to be using the straight-six M30 engine but I was working on one recently and one of the old bogeys with it came to light. Whilst the M30 (and the four-cylinder M10 from which it was derived) was and still is a fabulous engine, valve gear wear was a problem back in the day. If the unit was correctly maintained, the cam cover would be lifted every 10,000 miles or every Inspection II, the tappets checked and the two banjo bolts that fed oil into the cam spray bar would be checked for tightness. This was important because once they started to loosen, oil pressure in the spray bar would drop and the cam lobes would be starved of oil. That leads to cam wear and it's a big and expensive job to sort out. The E28 535i I did the tappets on recently had less than 40,000 miles, and both banjos were finger-tight only.

BMW, to its credit has sorted this problem recently, long after the M30 ended production in 1994 with the final straight-six E32 730i that ran alongside its V8 brother. What it's done is to alter the pitch of the thread slightly, making the banjo a spanner fit only – no more turning them in by hand. It has also coated the threads with a dried thread lock so once they're tightened to the correct 12Nm, they aren't coming loose again. Another neat trick is to open up the spray bar holes using a 2mm drill – there is one hole for two lobes and the bigger hole means more oil feed without a drop in oil pressure. I fitted these banjos and enlarged the oil holes on mine nearly 100,000 miles ago and at almost 300,000, the cam is still the original. The part number for the new banjos (recognised by the circle machined into the top face) is 11 42 1 738 621 and they fit the M10 units as well.



# Next Month

Behind the wheel of the M4 Moto GP safety car

## Plus

- New vs used: 520d vs 535d • Sampling the next generation 7 Series
- Tuned 335d tested • AC Schnitzer • Techno Classica • E34 M5 remembered



June 2015 issue available to download 18 May and in the shops 21 May

(Contents subject to change)



# BMW CONCEPTS: The cars they could have made

## Z2

**This high-riding, long-nosed concept shared its mechanicals with an unlikely sibling but it could well have inspired a future icon...**



For many years now, BMW has experimented with the idea of cross-platform sharing. By simply leaving the essential underpinnings intact and replacing the bodywork on top, it's easy to completely change a car's purpose. This idea was first explored using concept cars and that's how the Z2 was born. Apparently BMW's Technik engineers, who designed the original Z1, intended for the same platform to be shared over three different body styles. The first was the sports car that made it to production, the second was this Z2, also known as the Z1 Coupé and the third was a four-wheel drive version that never got off the ground.

The Z1 platform was ideal for this experiment as virtually all of the bodywork was non-structural but little information exists about the Z2 other than a few pictures. We do know that the dimensions were, of course, virtually identical to the small sports car, but its

styling made it appear quite an odd looking thing in most respects. The unique doors that lowered themselves down into the large side sill cavities were carried over from the Roadster and set the tone for the project. Now they would allow easy access to the more spacious cabin, which featured a proper boot area thanks to the short roof section, complete with prominent roof-rails, that extended to the rear to create a hatchback tail section. However, despite the hugely improved interior space, the Z2 remained strictly a two-seater.

Elsewhere, the long, flat bonnet led to a front-end that displayed hints of 8 Series styling, with its narrow, pinched nose and short and wide kidney grilles. The slender headlights that wrapped around to meet the wheels and the large wing mirrors that featured additional lighting were a little more futuristic. What is hard to gauge from low down angles is how wide the

car actually is. The arches are hugely swollen, particularly at the rear. From the back, the width is easier to note, and the bottom valance is also carried over from a Z1, although for its Z2 application it appeared to have twin-rectangular tailpipes.

While we know the underpinnings were directly shared from the Z1, the raised ride height hinted at off-road ability and perhaps four-wheel drive. The large profile tyres, too, were certainly in keeping with this idea.

But while BMW was clearly having some fun with the idea of hybrid crossovers that were both practical and sporty, the Z2 concept did share some striking similarities with a later model when you think about it. The bread-van style looks, strange proportions and huge arches were all traits adopted by the quirky Z3 M Coupé some years later. We're glad that turned out to be lower and a lot prettier though ●





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